

# NEW ATARI USER

The Resource for the ATARI CLASSIC and the ATARI ST

Issue 61 April/May

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A two player game that will also teach you how to program

## FOR THE ATARI ST

## VIDEO MASTER

One of the first 'multimedia' programs on the ST

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## FOR THE ATARI CLASSIC

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Solving problems with very long games

## KEYPRESS

Print your own chart of those graphics characters

## FANCY A ROUND?

A look at the golf games available

## SOME BASIC NOTES ... ON GRAPHICS



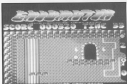
# BRAND NEW XL/XE SOFTWARE FROM PAGE 6

## ENIGMATIX!

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PAGE 6 is proud to be able to bring you these two superb new releases for the XL/XE. There are still a number of programs being released for the XL/XE but we have always been extremely selective so you can be sure that our programs from PAGE 6 are of the highest standard. ENIGMATIX is the first major program from a British programmer for some time and we are proud to make it available.

To order these products use the order form enclosed with this issue or telephone your order to us on 0785 210918. We accept Visa, MasterCard and Switch

**A BRAND NEW XL/XE ROM CARTRIDGE!**  
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## HYPNOTIC LAND

Yes, believe it or not, we have tracked down a brand new ROM CARTRIDGE for the XL/XE from Linwood in Italy who have produced this in conjunction with Atari Italy.

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## NEW ATARI USER ON DISK

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## SUBMISSIONS

PAGE 5 welcomes and encourages its readers to submit articles, programs and reviews for publication. Programs must be submitted on disk or cassette, articles should wherever possible be submitted on text files on disk. We retain the right to edit submissions and do not have strict rules for submissions, if something interests you, write a program or article and submit it!

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The next issue of  
**NEW ATARI USER**  
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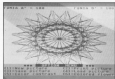
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# DISK BONUS

## FLOWER GARDEN



by Anastasios Bonidis

Flower Garden is a simple to use program that creates many beautiful symmetrical designs for you to view or print out. All that is required is for you to enter few simple parameters, and the program will begin to design a picture based on these. You can stop the drawing at any point or allow the program to plot all available points.

In order to speed up the drawing process the program uses a technique which speeds up the main process. When you load the Bonus, side of this issue's disk you will be presented with an XLINK to 4008000 translation. Use the 543,0071 key to change the floating point routine to 'real' and then press **START** which will load and run the program.

Initially you will be asked to enter two parameters. Simply enter any number you wish between 1 and 655 and the program creates its first drawing. You may enter real-time into the drawing is completed or press the **OPTION** key whenever you will be presented with a menu of choices.

**Option 1** allows you to enter another two coordinates to begin a new drawing.

**Option 2** allows you to print the design on screen on a 1024 printer in a choice of four different styles.

**Option 3** stores your design to disk in vertical compressed Atari Flash Table format (and MacPlus Plus format).

**Option 4** gives you the opportunity to load pre-drawn screens from disk. Screens 1 and 5 (random) are supported in both real-time and save systems. There are a number of saved screens already on the disk.

**Option 5** changes the colour contrast on screen so that you can choose the most attractive colours for your design.

**Option 6** animates the design by cycling colour registers and also plays one of three available Christmas tunes.

Anyone can have fun with Flower Garden but programmers may also find some of the routines used of interest. The program is written in Basic and so can be fitted and modified of the program modified or fitted for different applications. Routines of interest may be for the vertical compression saving routine (lines 83 to 101), vertical compression loading routine (lines 101 and 86 to 100), moving raster routine (lines 80, 100, 110 and 111), the multi-coloured Graphics 2 and 8 routines (lines 101 and 111), the random Graphics 15 command at line 80 respectively useful for 4008000 owners since Graphics 15 is not directly supported by those machines, and the Graphics 8 screen draw routine (lines 112 and 111) which can be modified to suit other printers.

Thanks and acknowledgements for many routines and ideas go to Jeff Bader's excellent book Basic Turbocharge, to BYTE magazine and various FOCUS B library disks.

Flower Garden is the bonus on this issue's disk which also contains all of the other programs from this issue ready to run. There are also occasionally extra bonus programs on these disks. Disk subscribers will receive their disk with the magazine but others can purchase the disk separately for £2.95 by writing to FOCUS B, P.O. Box 34, Stamford, ST11 1BB. Telephone orders using your credit card can be accepted on 0165 215655.

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# Mailbag

**Allan J Palmer  
sits in the hot seat  
at the sorting office  
awaiting your  
letters on all things  
Atari - get writing!**

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Welcome to my second Mailbag column. The trickle of new letters has begun to grow, but I look forward to more arriving and plenty of feedback on those published. In the meantime, here's another selection from the Page 6 sorting office ...

Allan Palmer, Mailbag Editor

## CONGRATULATIONS

With PAGE 6 reaching its tenth Anniversary, the most recent batch of mail has included a number of congratulatory messages, including this from Leslie Bennett of Hyde, Kent:

"Hi Douglas! I was lucky enough to obtain copies of the first number issues and can appreciate the gradual evolution, not only in quality but also in the knowledge and experience of all concerned. My first in 1980 I had never heard of Atari and I was several years later that I obtained my first 800XL and became acquainted with PAGE 6. Since then I have looked forward to the new issue every two months."

## HARDWARE ADVICE WANTED

Congratulations were also included by a letter from Mr. P Fry of London SE22:

"I am writing to let you know how much I enjoy your magazine which I have been reading since issue 44 (June/July 1988). In May of 1989 I was given a defunct 800XL which was stated to be not out of warranty so I wanted it to attempt to salvage it."

After cleaning and reassembling the piece restored and internal faults covered outside, Mr. Fry found himself with a working Atari 800XL and there remained to be needed additional hardware and software to create a fully usable system. Like many others, he discovered that the Atari Classic is not a machine with support in any high street or even specialist shop. There he found New Atari Users:

"...and was extremely surprised to find a number of adverts for the support of the 800XL system. My setup now consists of 800XL computer, AC112 recorder, 1050-disk drive and 7027 printer. I am still only a novice at the computing game and still need lots of help on it (propose to purchase a colour monitor and another printer in the near future). I wonder if some kind reader who just happens to be a passionate genius would like to write an article for the mag suggesting suitable monitors and printers to extend my existing system - a brief explanation of the terms ANTI-ALIAS, VGA/CGA, VGA are used in reference to monitors would be appreciated."

An article on printers has already appeared - I suggest you see it Page 6 with back copies of issue 33 which included a comprehensive feature on "The Printer Jungle". If you refer to issue 44, you'll find

a review of the Citizen 1280 printer. When it comes to monitors that's another story which doesn't seem to have been explored in print to any great extent, so this issue's first challenge to readers is - what would have do you use/recommend for an Atari Classic system?

## WORD PROCESSING

The article about printers mentioned above should also help Diane Hayes of Hury, Lancs who writes:

"I would like to see my 800XL fit word processing. I have AtariWriter Plus software and an old brother 1027 printer. What I am considering is whether there are any printers available to buy now? Would it be a good idea to buy new word processing software if the printer is quite old-fashioned? Just to highlight the main points to consider - any new ones that printer will require an interface to connect it to your Atari computer. The interface that seems most available at the moment is the MicroPort Interface from Gemini International or Dorvik Firm. AtariWriter Plus, by all reports, is a comprehensive package which includes a custom printer driver create facility so you should find no need to consider a new word processor."

## USER GROUPS

It's a pity that these don't appear to meet local Atari User Groups - in their heyday these were great places for answering the sort of questions posed by Mr. Fry and Diane above. Maybe there are more Atari User Groups than we think? In Luddlow of 10 Woodhouse Crescent, Ambleside, Tamesworth, Staffs DV7 5BB writes that:

"I am currently putting together a list of any local User Groups in Britain or elsewhere for that matter, and would like a very rough list of any User Group meeting this would send me information concerning where their groups is based, the name of the group, the address to write to for more information, whether they have a FT or mag, etc. So if there are any User Groups out there please, please, please reply and help keep the Atari Classic alive!"

It's been a while since NAM included a User Group list. How do you wish to help this project, and by the way, have you contacted NERLING (see issue 38 or TWANG) (see issue 40)? If you have any success, don't keep the information to yourself - publish it!

## LOAD FAILURES

A local User Group would be an ideal place to help Richard Millan of Scotland, Scotland who has been having problems with some commercial games:

"I have an Atari 68000 Games system, where I just got it, I bought 'Ninja', 'Spell-Jawed', 'WildStar', 'One Man & His Dog' and 'Demons of the Underland'. They won't load! All my other games do. Can you help me?"

Unfortunately, it's difficult to diagnose a problem that is only described as "they won't load" - if you have a problem, it's helpful to describe the circumstances as fully as possible. Have you disabled BASIC by holding-down the Option key while loading the game? Have the tapes been removed too far leaving too much leader between the game loading gates? Which games do load on your system? In these matters, only those who would like to bring a piece on game loading problems and their cure?

## WHO DARES?

From the land of "Neighbours" and "Home & Away" - John Stealy writes from Victoria, Australia about another game problem - this time the problem is unavailability:

"I am a fan of the 8-bit Atari and Doctor Who. I have read in the Australian Doctor Who fan club newsletter about a new computer game called 'Dalek Attack' produced by Alternative Software. Apparently 'Dalek Attack' is being released for IBM, Citic, Spectrum, Amstrad and Amiga. The 8-bit version costs £18.95 and the 8-bit version £7.95. As members to make of a version for the Atari Classic is planned for release. An Alternative Software have supported Atari 8-bit in the past. I urge everyone interested in this software to write to them promising to purchase a copy."

In this the same Alternative Software who announced a Postman Pat (another BBC star) game for the Atari Classic last issue 25-6-447 find that game very undesirable? To be honest, I don't very much like any software house in the UK will convert a game to the Atari Classic. Our best hope is a clone from one of the European software producers like K&F Ltd. In any way, the Atari Classic is a bit like the good Doctor who hasn't had any new television episodes for quite a while now ... I hope you enjoyed 'The Complete Doctor Who' disk 1.28 in the Page 6 PD Library.

## ALL AT C?

In fact, I've managed some sort of link between the letters in this column, can you do I link the previous letter with this one? Ah yes, the second & Doctor had a

computer named Arc, and the subject of this most letter is 'Arc C' ... John Young of Harrogate, Devon has this complaint:

"The Pacific Domain C computer 'Arc C' was reviewed in the April/May 1982 issue of New Atari User, and as a slightly frustrated user of Deep Blue C, and on the basis of the article, I bought 'Arc C' from Page 6's PD Library. Upon initial arrival, the computer appears to work, compiling the sample programs successfully, much faster than 'Deep Blue C' would. However, whenever I try to compile any of my programs which worked fine with DB2, the compiler crashes, despite all the required changes specified in the documentation having been made. Even the 'Jewess' Hello world' program causes a crash. A further, although slightly more 'forgivable', bug is that when run under a compiled DOS 8.0, the compiler locks up without even prompting for a filename.

Unless I have a corrupted copy, the program does not work, and I would recommend that no-one has anything to do with it. I think my experience shows that it's likely the author of the review, did not attempt to write a program with 'Arc C' but at least played with the sample, getting most of the material for the piece from the supplied documentation. It is also worrying how such obviously untested material got into general distribution."

This is something that I would like some feedback on. Arc C is not a new product - it features in other PD Libraries worldwide. So, does it work or not? Are there some other Atari Classic C programmers out there who can give us more information?

## "GOOD OLD INDEX."

### YOU CAN'T BEAT IT."

Blackburn Holmes - The Scares Vampire!

Another complaint, but not so drastic, comes from a reader in London SVT7 who wishes to remain anonymous:

"I managed to get myself a cheap school printer and enjoyed converting it up to the point it. I have the 800 interface, so no problem using a lead from that, but a longer lead was needed to sit the printer. I remember reading an article in New Atari User mentioning the complications of the lead so you could make your own. Could I find this article in the contents pages of the magazine ... or not?"

I also subscribe to a number of other magazines. At the end of each year for columns, they seem to publish an index of the contents. How about it Page 4?"

I must add that I give to the upper limits to to read some articles while searching for the information, as I made't possible to search ...

Back in 1980, reader Peter de Boole con-

plied an index to issues 1 - 12, which Les made available for a SALE, I think. However, issues 13 on seem to have gone un-indexed. This seems like another good challenge to New Atari User readers - has anyone completed their own Page 6/ATU index? If you have or plan to, perhaps writing a database like 'Home Filing Manager', 'Thinkware', 'Data-X', 'EasyFind' or other programs, why not submit it for inclusion in the magazine or on disk? In case our correspondent didn't find it, or someone else is looking for it, the article in question appeared in issue 20 (page 128 - and it was inadvertently omitted from the Contents page).

## SPARTANOS

An index to the magazine would make my life easier to answer questions like the following from Dennis Ward of Turley - that's Turley in Auckland, New Zealand, which must be the farthest point from Scotland that an Atari Classic and New Atari User magazine can be found:

"Could you please inform me whether there have been any articles written on Spartanos before issue 23, as that's where I discovered New Atari User. If not are there likely to be any in the near future?"

The only Spartanos related articles I could find are: Spartanos Construction Rev. 2/1.5, Doublet review issue 23 and Spartanos 2 review issue 29. You could also check the PD Library for the 8 Spartanos Don't Worry disks. Of course it is for better to let us know if any articles are planned for the future - is this a subject that others would like to see covered in more detail? Any volunteers to write an article?

## HOW DO YOU USE AN

### UPGRADE?

Devine also mentioned her fellow Kiwi, Bob Reynolds in her issue, and two days later, the following arrived from Bob Reynolds from 6 Fitzwilliam Drive, Turley, Auckland, New Zealand:

"I recently installed the 200000 upgrade by Scott Peterson from Page 6 PD disk 1.0555, and the completed set seems to be the same as before. The only anomaly is that FRONT FRONT reads 00000, and I cannot find any way of reorganising the extra RAM to see if it works. Any help would be appreciated."

I think if you revert the documentation files on disk 1.0555 you'll find information about increasing the extra memory - by looking at the file describing the 20000, 20000 upgrade, the principle of extra banks of memory remains the same as back the upgraded M, and SE machines. The whole 20000 is not available in one piece - beyond the 'standard' 44K, the extra memory is

# Mailbag

submitted in and out in 1988 banks. In fact, David Madsen's articles on Bank Switching in PAU issues 59 and 60 may also point you in the right direction. The best article on the subject is probably Tim Peake's "SOUNDAM 2.0" in the September 1988 issue of *AMPC*, vol. 9, no. 9 - this describes and includes a program that provides a super RAMdisk, no matter what memory upgrade is installed. How about some input from anyone else who has upgraded their Atari Classic giving us a tutorial on how you can use this extra memory for multiple large ROMdisks and the like?

## HUNT THE PROGRAM

From Belgium, Freddy van den Heuvelin, enquires about a particular program:

"I want to ask if somebody can tell me more about the program MANAGER-3000. I think it was written by a Dutchman."

When I first pulled your letter out of the mail, I hadn't heard of this program - but shortly afterwards I received a copy of issue 4 of FUTURA disk magazine UK 88 from Isaac Murray, Seaford, 71 Walker Road, Tarry, Aberdeen AB4 3DR, Scotland that disk includes MANAGER-3000 which is described as "... a very powerful database program which allows alphabetical storage." Print options are available for Epson compatible printers. If you have an Atari 1050 printer, FUTURA issue 4 also contains a utility to print MANAGER-3000 lists on that printer.

Freddy is also looking for fellow Atarians in the Continent:

"I would like to know if there is a User Group in Belgium or the Netherlands. If there is not, I would ask users from that place in the Netherlands to write me if they are interested in starting one."

Freddy's address is: Veldstraat 15a, 3200 Wommel, Belgium.

Lastly, Freddy requested some help in beginning machine code programming. Hopefully, Daniel Lew's "First Steps" series which began in issue 57 is providing you with a good starting point, Freddy.

## XE MIDI MUSIC

Syd Brouhaamp from Courbeil, West Sussex thanks Lew and his Team for an excellent magazine and they add a few notes here, summarized (part) about the Classic's musical capabilities:

"I like music - although I cannot read it! The store and play of the same tone, it's fun to experiment using the 13000C in conjunction with MidiMaster and a Crite 225 synth. It may be of interest to other readers that Page 6 PD-disk 'Music of America' also work with MidiMaster using 'AFR4'. This may already be a known fact but I can't

recall seeing it published in New Atari User. Using the Crite, which is a multichannel synth and selecting 'BRASS' it sounds quite different - some play better than others, but the words, 'Washington Post', seems to be the first. I have all the other music file folders in the Page 6 Library - some work better than others. An Atari user designed for the PDSKY sound chip built into the Atari Classic, it is to be expected that some do not work very well with MidiMaster."

Thanks for the information, Syd. The Atari Classic music score was briefly touched on in the early instalments of John S. Davidson's articles. Would anyone like to contribute more on what can be done with Midi and synthesizers on the X-Box?

## FROM XE TO ST

Don Farnsworth of Brighton, East Sussex, has had problems in porting word processor text files from his Atari Classic to his ST.

"Perhaps someone could help me with a slight problem that I have with the transfer of my WordPro files to my ST. Having made up a Mail Master table with the following conversions:

500	600
pin 2	to pin 4
pin 3	to pin 3
pin 4	to pin 5
pin 5	to pin 7
pin 7	to pin 5
pin 9	to pin 6

I find that using 00ers on the 13000C and Uniform on the STC manages will only make place from the STC which is not much use. The fact that my two computer set ups are an opposite sides of the room means that I have to use a long lead (I admit) - obviously not a standard length. I could only wish I could obtain a communications program like Uniform for the 13000C which has the provision for toggling outputs 99. Does anyone have this function?"

We've also had correspondence from Daniel Borewick, Don's son who has inherited the 13000C from his dad judging by the letters. Daniel is inspired that the support for the Atari Classic - that is strong in the Continent, as described by Derek Fenn in his review of "Dancefloor '88" in issue 56, spills over into the UK. Perhaps with the "Single European Market" of 1993, this could become more of a reality? Daniel is one of the many frustrated Atarians who wonders why many games on the CD4 or other 5.25s weren't converted to the Atari Classic utilizing its full capabilities.



## HALL OF FAME

Tom Rudge of Leigh, Lancashire has an interesting suggestion for all games writers:

"There is one thing that I would like to encourage, and that is for all programmers who submit games to New Atari User (and to other magazines and PD-magazines) to write a Hall of Fame routine which scores high scores to disk. I believe that all games should score at least the top ten high scores to disk and I have determined that I am not going to bug any more that do not do this. Also I think that your game reviewers should give us this information when they review games. You have published many games, particularly by DR. Hallow which could have been greatly improved and could have been more addictive with a high score save. I have done this myself with the BASIC games you have published. Our 3 column program in machine code so I can enable to add a high score save to these games."

I agree with your view that the inclusion of a Hall of Fame routine does make games more addictive - giving you a record of what score to aim for on the next occasion you load the program. However, there are many excellent games which you will delight yourself in if you restrict yourself to only those with that facility. You say you've modified BASIC games to accommodate this feature - have you developed a generic routine to accomplish this? Is it something you could contribute to the pages of New Atari User? Perhaps someone else will provide a similar routine for word processing in machine code games? Personally any routine should cater for cassette users who would not have a save to disk facility ...

Thanks for your thoughts Tom, what do others think?

## SUPPORT YOUR LOCAL

## SOFTWARE HOUSE

Paul Hurley from High Wycombe, Bucks, is another games player who has these observations:

"I recently wrote to Zappella Games concerning them for their Atari 8-bit games and asking about new releases. Unfortunately, they informed me that if the market for the Atari 8-bit did not pick up then they would not be producing any more software for the Atari. They stated that the sales for the 8-bit are less than the second wave of software and producing the game. On this sad news, I urge people to buy Zappella's existing games and to show support for any new releases."

What more is there to say?



## TAPES TO DISK

Another keen gamer/player is Martin Frew from Leeds:

"I have been an Atari owner for over nine years, but have only had my interest re-kindled since discovering most order, jump'n'win, but being on the 'Yes' count that I can't hold my frustration at the number of apparently great British games available, but only on tape. It makes me cringe every time I open a copy of *New Atari User* and see loads of games (including a few old American ones) that are unobtainable for disk drive-carrying me. Is it not possible that Microtron and other budget companies convert several of these games to disk, even if they're sold through mail order dealers? If so, who could complete about spend ing £4 to £5 for a particularly good commercial game on disk?"

Has anybody had any correspondence with Microtron or other companies on this subject? Are there any particularly reasons why these aren't budget disk releases? In the main, problem the relative feasibility of such a product? In the meantime, have you considered purchasing the *Translink IV* utility from the Page 6 Accessory Shop? - Oh, you'll need a cassette recorder as well, but... ? If you have a cassette recorder, another venue to consider is the range of Turbo-load high speed tapes available from Derek Price's Movie Despatch.

## DISKS AND DOS

The mention of "TranDisk" above leads on to this letter from C. Anderson of Leamington, Notts:

"Is there a utility that enables you to convert 'TranDisk' OSU files to formatted DOS OSU files? Also is there a utility that enables you to convert from 'TranDisk' disk drives to binary DOS files?"

Do you know that if you use DOS 2.0 or any other Enhanced Version DOS, when using options F (Copy File) or C (Duplicate File), if you are copying or duplicating files that go beyond sector 700 (you will notice either an error message or the '...' characters on either side of the field) in excess of sector 707, it underlines Atari created compatibility with DOS 2.0, but surely they could have come up with a fix?"

Has anybody had experience of the sort of utility Mr. Anderson is enquiring about? A possible program MAY be FILEDOS based on PUFUN Disk 3 from Stuart Murray of the North of Scotland Atari User Group (604040) - 71 Walker Road, Terry, Aberdeen AB1 2SL, Scotland or from the Page 6 PD Library. Can anyone confirm this?"

I'm afraid I don't understand what point you're trying to make about DOS 2.0 -

Atari (and IBM Business) made DOS 2.0 as compatible as possible with DOS 2.0. 5. DOS 2.0 formatted disk (and cart) hold as much information as one formatted with DOS 2.0, so the 'v' and 'y' characters are used to show those files on a DOS 2.0 disk that won't be seen if using DOS 2.0.

## AM I DENSE ABOUT

### DENSITIES?

While on the subject of DOS 2.0, a letter from Robert Francis of North, West Gls. emerges onto the scene (classification).

"I'm confused! In the catalog for ENCEL disk magazines, some of the disks require a double density drive, but all DOS's double density? If not, how will I know if my 1050 is double density? (The '80 DOS' notes on my 1050 - does this mean my drive is double density?)

Do any of the British companies (e.g. Alteris, Alternative Software, Zappin...) still produce 5.25 games? It is a shame that Atari does not re-release the 1000E. (The Spectrum can do a success, the 1000E is a cheap price should do well."

The subject of disk densities has cropped up recently. Brian Cunningham RD Thomas Avenue, Bally, Downshire (261 001) noted an issue 8 of his *Atari News Disk* that he had... recently received a 7 1/2 inch cartridge about this subject. The whole argument is over my descriptions in the PD catalogue. I categorise disks as SD and DD. I say SD units on my drives, but DD units is 1050. But, DD is sometimes used to describe four DD disks (1050, format) which is used by ENCEL and floppy. The standard 1050 density is often referred to as enhanced density or medium density. If I wish to use simple format, single and double, are you aware of this? Brian notes that in his PD library "... only have 2 disks which need a floppy/LS double 1050 to run, and these disks say that in the catalogue. Most PD comes on SD disks anyway. Very many fine PD disks for my other disks for their master need a modified 1050 to run."

I agree with Brian's view - most Atari software commercial and PD has to be compatible with the vast majority of drives and therefore must use the standard format of an HD or 1050, so in the Atari Classic world there are only two standard formats: Single DD and Dual DD. The relatively few pieces of software that can 1050 formatted disks should be described specifically as such. I've looked back at ENCEL's adverts in SD and recalled that any that mentioned 'double density' - they either refer to 'enhanced density' or 1050 format. All standard 1050s are capable of writing disks in the enhanced format produced by DOS 2.0 - 40 tracks of 28 128-byte sectors, but only 1025 sectors

available in 1050. When Atari introduced the 1050 they soon realised they needed to maintain compatibility with the 1000 and DOS 2.0, so DOS 2.0 was born. Part of the problem was to be Atari's cost of more than one description for the format produced by DOS 2.0 - in the manual issued with the XF551 disk drive, they refer to both 'enhanced density' and to 'dual density' (page 1411).

## NETWORK THE 8-BIT?

Arthur Morris from Leamington, Oxford has an interesting question which one of our hardware experts may be able to shed some light on:

"I am currently using four home Atari 8-bit second gear hard on Atari (1050) and 1050 drives and find that installing them over the whole task of three days each - mostly used processing with a Panasonic ASP/081 printer. I also own a 1000E and a 800 machine and have been wondering if it is possible to have more than one machine connected to the disk drive, TV and printer. It could be very convenient to be to have a WP program and a spreadsheet running at the same time in different machines with the ability to switch between them without unplugging one machine and making a physical connection with the other. Is it also possible to transfer disks for storage in the other machine - or is this asking too much?" Arthur also notes that he has enjoyed reading our magazine since issue 4 of Page 6 and his message was in issue an early reader.

Well, I'm a bit out of my depth when it comes to these exotic hardware questions, so I'm hoping that we'll get a few letters on the possibilities of networking a group of Atari 8-bits. Something should be achievable - wasn't there at least one U.S. Atari Industry Board that ran with a number of 800s linked to a shared printer and hard disk - ? When it comes to transferring data between machines, run a communications program like Kermit be used with an appropriate interface/cable between the computers?"

Well, that's it for another issue. Don't forget that Mailbag is only as interesting as your letters, so let's have some answers in the problems posed this issue together with some new topics and comments. I intend to make Mailbag and instructive columns so that means you need to join in. I am waiting for your letter!

**Write to MAILBAG at  
Page 6 Publishing,  
P.O. Box 64, Stafford,  
ST16 1DR**

# KEYPRESS

## A Reference Guide to Atari's Special Characters

by Peter Kirton

Occasionally, letters appear in "Mailings" requesting a listing of the keypresses used to generate the Atari special graphics characters. How many of us have problems finding that issue of their favourite magazine which provided a table of these characters? A separate list on a sheet of paper which could be kept handy in the computer would tend to solve this problem. To this end, I decided to write a short program to list such a table on any printer, showing the graphics character, its keypress combination and the decimal equivalent of the character.

The program does not have any fancy frills. To maintain compatibility with most (if not all) printers, I have kept to single density bit image graphics `MODEM` & All text prints to default font and pitch settings as many printers use non-Kern standard codes to change them. However, the final output is a neat table which will be a handy reference to help in typing many magazine listings. The DATA statements may also come in handy as they construct the actual Atari special characters set.

Type in the program and save it on a disk which is kept in an accessible spot. When the program is RUN, you will be reminded to turn the printer on before proceeding. Press any key and, in a minute, your list will be complete. If you feel it for make my mistake and put it away somewhere safe - never to be seen again simply print out another one. Now you can spend more time typing with less time wasted by searching through back issues for those lost codes.

```

00 0 0000 *****
01 0 0000 ** START SPECIAL CHARACTER**
02 0 0000 ** PRINTED LISTING**
03 0 0000 ** by Peter Kirton**
04 0 0000 **
05 0 0000 **
06 0 0000 **
07 000 *****
08 0 000 * NEW ATARI CODE - SEE END *
09 0 000 *****
10 0 000 *****
11 0 000 *****
12 0 000 *****
13 0 000 *****
14 0 000 *****
15 0 000 *****
16 0 000 *****
17 0 000 *****
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92 0 000 *****
93 0 000 *****
94 0 000 *****
95 0 000 *****
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98 0 000 *****
99 0 000 *****
100 0 000 *****

```



# FIRST STEPS IN ASSEMBLY

## part 5

**W**elcome to the final instalment of *Beginners Assembly Language*. I hope you've kept up so far. In this final part I will attempt to tie up some loose ends, and introduce (or re-introduce) some that you've seen and know about them all. And as the grand finale I present a table of all the available 68000 instructions as a kind of reference guide.

In the earlier part of the series we discussed the CLC and SEC commands whereby you could set and clear the carry flag in the status register. It is also possible to set and clear other flags in that register. The alterable flags are the Decimal flag, the Overflow flag, and the Interrupt flag.

### SEI and CLI

SEI begins with I for Interrupt flag. When this is set, interrupt requests are disabled and when cleared interrupt requests are enabled once more. The commands are SEI (SEt Interrupt) and CLI (CLear Interrupt). The only use I've seen these commands put to is to display List Interrupts (See Listing) where the command SET (SEt) turns from Interrupt to used as the CLI equivalent of RTS (See program listing).

### CLV

CLV (Clear overflow) is used to clear the overflow flag. Note that no equivalent command exists to set it.

### SED and SED

Lately we SED (SEt Decimal) and CLD (CLear Decimal) instructions. SED enables access to a special mode where numbers are represented in a form known as Binary Coded Decimals (or BCD). This is where the value a byte represents ranges from 00 to 99 (instead of 00 to FF) as is usual. It is used as its name suggests to represent decimal in a better form. The lowest nibble (set of four bits) represents the units digit and the highest nibble represents the tens digit (each digit of course goes from 0 to 9). There should be no problem in this. A problem in BCD arises where addition or subtraction of two numbers in this format occur.

e.g. 0009

+0111

-----

In normal binary addition this would produce an answer of

*Daniel Lea concludes his series on Assembly Language programming with a summary of all the commands available*

0010. However as you know this is not acceptable as a Binary Coded Decimal number. The answer to the special mode mode mentioned earlier.

Once SED is used to activate the BCD mode, the next accepted answer of 09 + 11 appears. That is 010. In this case 000 in the accumulator and 1 in the carry flag. CLI would return the processor to its usual addition mode.

### NOP

I'll complete our look at the machine code commands with a command which does nothing! NOP (No Operation) does nothing except delay the processor slightly, hence it is quite useful in delay loops.

The reason, I think, why this command exists at all is that in the bad old days of computing people didn't have assemblies with which to program machine code, they had to do it by hand. So the NOP command was created by the microprocessor designers, so that a programmer could leave gaps in his program (i.e. filled with NOPs) so he could insert instructions at a later date without having to retranslate any jumps and branches etc.

That's nearly it except for the table which you will notice somewhere about this page for the next!

If you have followed all of my articles you should have a good amount of knowledge of programming in Assembly Language and be able to progress onto some very advanced programming, maybe even write your own machine code game. To advance yourself from this point I recommend Mapping the Atari Computer as a superb book. And also keeping an eye on this magazine... there are some super articles in back issues if you sit through them. Anyway happy programming and bye... for now at least!

Mnemonic	Meaning	Operation	ADDRESSING MODES								FLAGS						
			1	2	3	4	5	6	7	8	9	10	11	12	Other		
ADD	Add with Carry	$A + M + C \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	X
AND	AND with Accumulator	$A \wedge M \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	
ASL	Arithmetic Shift Left	$C \rightarrow T \dots S \rightarrow C$	-	ok	ok	X	X	-	-	-	-				X	X	X
BCC	Branch if Carry Clear	Branch if $C = 0$	-	-	-	-	-	-	-	-	-				X	X	X
BCS	Branch if Carry Set	Branch if $C = 1$	-	-	-	-	-	-	-	-	-				X	X	X
BEQ	Branch if Equal to 0	Branch if $Z = 1$	-	-	-	-	-	-	-	-	-				X	X	X
BFL	Bit Test	$A \wedge M$	-	ok	ok	-	-	-	-	-	-				X	X	X
BM	Branch if Minus	Branch if $N = 0$	-	-	-	-	-	-	-	-	-				X	X	X
BNE	Branch if Not Equal to 0	Branch if $Z = 0$	-	-	-	-	-	-	-	-	-				X	X	X
BPL	Branch if Plus	Branch if $N = 1$	-	-	-	-	-	-	-	-	-				X	X	X
BRK	BRK	Interrupt Processor	-	-	-	-	-	-	-	-	-						LB
BVC	Branch if overflow Clear	Branch if $V = 0$	-	-	-	-	-	-	-	-	-				X	X	X
BVS	Branch if overflow Set	Branch if $V = 1$	-	-	-	-	-	-	-	-	-				X	X	X
CLC	Clear Carry Flag	$C \rightarrow 0$	-	-	-	-	-	-	-	-	-						0
CLD	Clear Decimal Flag	$D \rightarrow 0$	-	-	-	-	-	-	-	-	-						$D = 0$
CLI	Clear Interrupt mask	$I \rightarrow 1$	-	-	-	-	-	-	-	-	-						$I = 1$
CLY	Clear overflow flag	$O \rightarrow 0$	-	-	-	-	-	-	-	-	-						0
CMP	Compare to accumulator	Compare $A$ to $M$	ok	ok	ok	-	-	-	-	-	-				X	X	X
CPX	Compare to X reg.	Compare $X$ to $M$	ok	ok	ok	-	-	-	-	-	-				X	X	X
CPY	Compare to Y reg.	Compare $Y$ to $M$	ok	ok	ok	-	-	-	-	-	-				X	X	X
DEC	Decrement	$M - 1 \rightarrow M$	-	ok	ok	X	X	-	-	-	-				X	X	X
DEX	Decrement X	$X - 1 \rightarrow X$	-	-	-	-	-	-	-	-	-				X	X	X
DEY	Decrement Y	$Y - 1 \rightarrow Y$	-	-	-	-	-	-	-	-	-				X	X	X
EOR	Exclusive OR with Accum.	$A \oplus M \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	X
INC	Increment	$M + 1 \rightarrow M$	-	ok	ok	X	X	-	-	-	-				X	X	X
INX	Increment X	$X + 1 \rightarrow X$	-	-	-	-	-	-	-	-	-				X	X	X
INY	Increment Y	$Y + 1 \rightarrow Y$	-	-	-	-	-	-	-	-	-				X	X	X
JMP	JUMP	Jump to location	-	ok	-	-	-	-	ok	-	-						
JSR	Jump to Subroutine	Jump to subroutine	-	ok	-	-	-	-	-	-	-						
LSA	Load Accumulator	$M \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	
LDA	Load A	$M \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	
LDI	Load I	$M \rightarrow I$	ok	ok	ok	X	X	-	-	-	-				X	X	
LDR	Logical Shift Right	$C \rightarrow T \dots 0 \rightarrow C$	-	ok	ok	X	X	-	-	-	-				X	X	X
NOP	No Operation	No operation	-	-	-	-	-	-	-	-	-						
ORA	OR with Accumulator	$A \vee M \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	
PMA	Push Accum. onto stack	$A \rightarrow M(S) - 1 \rightarrow S$	-	-	-	-	-	-	-	-	-						
PHP	Push status reg. (P) onto stack	$P \rightarrow M(S) - 1 \rightarrow S$	-	-	-	-	-	-	-	-	-						
PLA	Pop. Accumulator from stack	$S + 1 \rightarrow S; M(S) \rightarrow A$	-	-	-	-	-	-	-	-	-				X	X	
PLP	Pop. status reg. (P) from stack	$S + 1 \rightarrow S; M(S) \rightarrow P$	-	-	-	-	-	-	-	-	-				X	X	X
ROL	Rotate Left	$C \rightarrow T \dots 0 \rightarrow C$	-	ok	ok	X	X	-	-	-	-				X	X	X
ROB	Rotate Right	$C \rightarrow T \dots 0 \rightarrow C$	-	ok	ok	X	X	-	-	-	-				X	X	X
RTI	Return from interrupt	Return from interrupt	-	-	-	-	-	-	-	-	-						
RTN	Return from Subroutine	Return from subroutine	-	-	-	-	-	-	-	-	-						
SBC	Subtract with Carry	$A - M - C \rightarrow A$	ok	ok	ok	XY	XY	-	ok	ok	-				X	X	X
SEC	Set Carry Flag	$C = 1$	-	-	-	-	-	-	-	-	-						1
SED	Set Decimal flag	$D = 0$	-	-	-	-	-	-	-	-	-						$D = 1$
SEI	Set Interrupt mask	$I = 1$	-	-	-	-	-	-	-	-	-						$I = 1$
STA	Store Accumulator	$A \rightarrow M$	-	ok	ok	X	X	-	ok	ok	-						
STX	Store X	$X \rightarrow M$	-	ok	ok	X	Y	-	-	-	-						
STY	Store Y	$Y \rightarrow M$	-	ok	ok	-	Y	-	-	-	-						
TAX	Transfer Accumulator to X	$A \rightarrow X$	-	-	-	-	-	-	-	-	-				X	X	
TAZ	Transfer Accumulator to Z	$A \rightarrow Z$	-	-	-	-	-	-	-	-	-				X	X	
TSD	Transfer Stack pointer to S	$S \rightarrow X$	-	-	-	-	-	-	-	-	-				X	X	
TGA	Transfer X to Accumulator	$X \rightarrow A$	-	-	-	-	-	-	-	-	-				X	X	
TSX	Transfer X to Stack pointer	$X \rightarrow S$	-	-	-	-	-	-	-	-	-				X	X	
TYA	Transfer Y to Accumulator	$Y \rightarrow A$	-	-	-	-	-	-	-	-	-				X	X	

### ADDRESSING MODES

- Immediate
- Direct
- Zero Page Direct
- Indexed Direct
- Zero Page Indexed Direct
- Indirect
- Pre-Indexed Direct
- Post-Indexed Direct
- Relative

### Meaning of various letters and notation used

- A Accumulator
- M Memory location referred to by instruction
- X X index
- Y Y index
- Form - to
- AND
- OR
- EXN Exclusive OR
- T... reference to bits in a byte
- S Stack pointer
- Mn Memory address on the stack
- (C) complement of carry flag

### In the information on addressing modes

- ok Ok to use the particular addressing mode with the instruction indicated
  - X Xk to use the X index
  - Y Yk to use the Y index
  - XY Only to use the X and the Y indices
  - Indicates a particular addressing mode isn't available
- A full line of dashes indicating no addressing required with the particular command

### In the information on flags

- 0 An X indicates a particular flag is affected
  - 1 A flag is cleared
  - 1 A flag is set
- In the other column any flag affected is indicated by its letter

### List of flags and symbols

- 0 Sign (negative) flag
- 1 Negative number
- 1 Overflow flag
- 1 T flag
- 0 Break command
- 0 Decimal mode
- 1 Interrupt mask
- 1 Interrupt requests disabled
- Z Zero flag
- 1 Result zero
- C Carry
- 1 Carry-over





# THE TIPSTER



Well here we go again, another bumper pack of all that is best in the world of Atari Classic tips. University work has meant that this one takes a bit longer getting to the editor but I hope he'll forgive me for that (because I could be a fine thing).

Comic Relief has been and gone once again but the fun doesn't stop there, I hope to continue it for those of you who read this. This month we have the solution to Soccerball if hope ... it's longer. Anyway stop snapping and ... stay eating lots of fat!

## RICK HANSON

Ray Asley has spent two months solving RICK HANSON and has now finally allowed me to publish his hard work, so get your adventure out and let's get going!

It's late at night now and I will not make my eye sight, nasty, brainy sleep, artistic integrity and general well being, so everything is the right way round. (I know that it's boring but you can't have everything)

W, I, GET RECORDER, PLAY RECORDER, (PRESS SPACE), THROW RECORDER, O, W, N, GET PILL, O, W, U, N, H, D, H, E, GET SPINNER, W, U, U, E, E, D, E, E, E, N, GET POLISH, U, W, W, U, N, N, PRAY 9 TIMES, LEAF, O, HIT MAN WITH SPINNER, O, D, D, H, E, E, SW, W, W, W, W, W, W, GET COIN, W, U, W, GET RAZOR, E, N, H, E, E, I, GET HOOK, O, W, I, W, U, E, E, READ NUMBERS, H, H, E, O, E, E, E, S, W, W, W, W, U, I, PUT COIN IN BANDIT, PLAY BANDIT, GET COIN, W, GET BATTENDER COIN, DRINK RUM, U, O, U, U, N, H, N, OPEN DOOR, E, SLEEP, GET LETTER, READ LETTER, W, N, OPEN W DOOR, N, SPEAK WITH RAZOR, E, E, E, E, D, O, D, O, C, N, E, E, E, E, N, N, W, W, N, I, W, U, S, READ NUMBERS, E, S, E, U, NE, E, CUT ROPE WITH RAZOR, GET ROPE, W, W, E, S, W, N, H, O, O, M, W, I, ASK FOR 12 APOSTLES, READ BOOK, O, E, N, W, W, N, H, N, H, W, S, W, W, W, W, GET GLOVES, E, S, S, GET CLIP, N, H, E, E, H, E, U, W, I, PICK LOCK WITH CLIP, S, PULL JACK N, PULL JACK W, WEAR HANGKEROCHIEF, N, (PRESS SPACE), SEER, GET BLADE, S, PULL JACK E, TURN HANDLE, PUSH JACK UNDER TRUCK, PULL HANDLE, PULL HANDLE, TURN HANDLE CLOCKWISE, U, E, N, (PRESS SPACE), WEAR GLOVES, CUT WIDE PIPE WITH BLADE, PULL BOTTLE WITH PETROL, O, SPARK, W, SE, S, O, W, W, N, H, H, E, E, E, E, S, S, W, W, GET THREE, I, GET COVER, O, H, E, E, N, H, W, W, W, W, W, W, N, N, SWIM, (PRESS SPACE), S, W, W, W, W, COOGE, W, N, I, GET TONEL, O, DROP PILL, N, N, W, O, G, GET GUN, W, H, E, E, OPEN DOOR, I, S, N, GET SKIS, S, W, O, W, N, TIE ROPE TO HOOK, THROW ROPE, CLIMB, (PRESS SPACE), N, READ SKILL, S, W, W, N, H, H, E, E, W, ASK BOSS WITH POLISH, WEAR SKIS, O, D, O, D, DROP SKIS, E, N, GET SARCH, S, W, W, MAKE BOOM, LIGHT BOMB, THROW BOMB, S, DROP SHOT, E, N, GET UNIFORM, WEAR UNIFORM, I, DRIVE, DRIVE, DRIVE, GO LOOP, DRIVE, O, S, OPEN DOOR, E, S, H, O, S, O, H, O, O, D, W, W, W, W, N, GET SCREWDRIVER, S, E, E, E, E, E, E, O, D, W, W, N, GET BULLET, S, S, W, U, S, U, S, E, N, N, E, S, U, S, TYPE 100'S, OPEN DOOR WITH SCREWDRIVER, S, W, THE GENERAL WITH RAZOR (END OF GAME)

# GOAL!

A plethora of tips for **FANTASTIC SOCCER** come from John Hubbard and Paul Gilmore from Liverpool. When you are wanting to tackle the opposition keep your finger on the button and you will easily get the ball and send the opposition flying. When shooting, run to the corner of the area and keep the finger on the button and aim for the goal. If there are no players between the goal and you then you'll have lobbed the goalie and scored in the top corner. When you are trying to run faster, just keep clicking and you'll end up going much faster and always pick the defence that has the few defenders which makes it the best for this type of game.

Hold the joystick down and to the left if you are the white player or down and to the right if you are the red player.

Last, but not least, John throws in a couple of tips for **RAMPAGE**. In some buildings you can climb to where the windows end and punch the building as much as you like which gives you points beyond points. Also when your partner dies and turns back into a human, you can run over to him and eat him for help!

## GAUNTLET

Yet again **GAUNTLET** has given me to another tip, this time from Stephen Hutchinson of Crewe. If you find it hard to pass levels rooms that only have enough keys to get out in the right sequence then what you have to do is as follows. If two players made both players start pick up the same key, enabling the room to be completed easily. All you have to do is both move in collect the same key from the adjacent space at exactly the same time. Incidentally this can also be used for collecting food and potions.

I think this is a first in that we have a quick tip for **ALTER-NATIVE REALITY** from Frank Cunningham of Striving in Bradford. He says that the riddle of the door of Automorphic Truth is 3, 1, 1, 2, 2 (second door, first door, first door, second door, second door).

## FABULOUS THREESOME

Here is **TAPPER**, **TWILIGHT WORLD** and **FRED** come from Lee Nelsons of Westfield.

First of all where you hear all of your lives in **TAPPER**, simply press fire to restart where you left off. This can be done indefinitely.

If you are really in any of the malls, in **TWILIGHT WORLD** it is easy to say that there is an entrance to a secret level there.

On level six of **FRED**, try to stay on the top platform for as long as possible as there are many bonuses to be had.



# SNOWBALL

**S**imon Carter has been waiting a long time but his case has now finally come, the promise on now with the complete solution to **SNOWBALL**, from Level 9. It's a bit big, what follows below is the full complete solution, written the right way round from it takes too long the other way. He also promised me with some maps but I can't promise that they'll appear this issue (his other ideas judges of those) If they don't appear this issue then they'll be with you shortly O.K.?  
Remember that the solution is round the right way so that **PLUSHI BOG** = **PLUSHI BOG** (simple really)

Let's go!

Open the coffin by pulling the lever. Get out and go North to the necessary entrance. Swallow another coffin by pressing any three buttons. Go south and use the coffin to go through the trapdoor in the ceiling to the next level. Go North again and leave through the necessary door, avoiding Nightingales at all costs. Travel west until you reach a feature in the floor. Press this button once to call the lift.

Enter the lift and after the door has closed go down through the floor. Continue descending until you reach a jet with a toothpick in. After taking this toothpick, go up through the lift and beyond until you come to a trapdoor at the top of the shaft. Open this door. Once through go South until you come to an alcove. The trip is long so don't be misled by repetitive locations.

Once in the alcove you will find two buttons - green and yellow. The rule with airlocks is that the green button opens the door you have just come through whilst the yellow button opens the door you are about to go through. In this case the green button will open the north door and the South door will be opened by the yellow button.

Go through the South door until you reach the smooth cylinder. Go down from the smooth cylinder into the message pocket and get on the couch. Wait there for one hour and then get off. Having a message enables you to carry more items. Slaying on the couch has very serious consequences... (no prizes for guessing what they are)

After leaving the message go east and get the starter lift but leave the switch. Return to the smooth cylinder and go South to the cylinder. Wait here for a robot to approach and follow it down. You can try before a robot arrives but you will be rejected.

Now go North from the large low room, through the library, into the message archive. Get the message and return to the library. Insert the message into the viewer and then examine the viewer. Two rules will be given - yours and the crew member you are supposed to make. Make a note of the crew member's as it is vitally important. Using the screwdriver from the toolbox get the helpup from the viewer.

Now go to the cards and examine the alcove. You will find some LEDs. Upon examination it will be discovered that they are in fact a diagnostic probe. Go to the cupboard to the North of the door and get both cup and lamp. Return to the door and insert the cup into the machine. After filling the cup with this liquid return to the helpup/robot South of the S.W. corner instead. Once there search the body and take the bracelet, necklace and Kerlar locket.

## a complete walk-through by Simon Carter

Now go to the console and wear the viewer. To call up the menu remember the screen **LOOK AT SO**. **BLISS** before X is a number.

Return to the door and enter the date. This will bring you close to the damaged junction door. When you find this attach the diagnostic probe to him.

Once you have found out which part he requires look for it in the surrounding area. When it is in your possession give the part to the door and he will give you a bubble helmet.

Now you need to obtain the laser from the door handling the screen. This is accomplished by the following method:

1. Get the red ticket from the red ticket machine.
2. Swap the red ticket for a red beam.
3. Get the green ticket from the green ticket machine.
4. Swap the red beam and the green ticket for an orange beam.
5. Get another red ticket.
6. Swap the red ticket and the orange beam for a yellow beam.
7. Get another green ticket.
8. Swap the green ticket and the yellow beam for a green beam.
9. Get another red ticket.
10. Swap the red ticket and green beam for the laser. (helpful)

Now go to the narrow Marlon cylinder and enter the alcove. Remember here to wear the bracelet and helmet. Also insert the helpup in the lamp. You are now ready to traverse the Web.

This will take you to the snowfield below the platform A. Examine the monitor and use it to go to platform B. Know the Snowball Hillon and go south until you reach a store room with a tank of air and an airlock unit. Attach the flask to your helmet and place the can in the toolbox. Now close the toolbox.

Return to Platform B and visit Platform D, F and H. As D is the closest. As F go to the south corner of the cave and get the linked cylinders. As H go to the large hangar and get the console screen. Now go to Platform C and dig in the snow by the ladder to find the keys to the snowdoor. Enter the snowdoor itself and get the fire extinguisher. Leave the snowdoor. Once you are used to the ladder drop everything except the cup, locket, bracelet, starter lift and the helmet. By now you need to make the crew member to obtain the security code for the door in the 'Hillon'.

The key for the crew member code you received in the library is as follows:-

- Colour 1. Marberry door - Blue or green.
- Colour 2. Colour of freezer disk.
- Colour 3. Number on the corridor.
- Colour 4. Level of freezer disk.
- Colour 5, 6, 7. Coffin code itself.

Return in the first alcove you used and go North. Examine the bracelet you removed from the body regularly. It will have a series of colours on it. When the last colour is the same as

**it goes on over here** 



## QUICK E'S \*\*\*\*\* QUICK E'S \*\*\*\*\* QUICK E'S \*\*\*\*\* QUICK E'S

Two Quickies from Fred Major at the Netherlands. First up is another for **FREE!** If you type in **CHARGE** then you can select the starting level by pressing 0 to 9.

Secondly in **MIS-SESSION SEBARK**, if you type in the name of the author **JANUSZ PELC** then you can also select the starting level by pressing 0 to 9.

# SNOWBALL continued

colour 2 on the crew members code go down the ramp in the main colour section. Go East or West until you find the lift button. Scanline the lift and go to the level corresponding colour 4 to number 4 above. If number 4 was blue then you would press the blue button in the lift. Leave the lift and go East or West checking for the bracket against the lights in the ceiling. When the lights in the ceiling are the same as colour 2, 3 and 4 press the number corresponding to number 2 above. Now press the three buttons that are the same colours as 5, 6 and 7 above. Take the coffin that appears to the review machine which is to the north of the lift. To lift the coffin you need the stacker lift. Remember that you still have to avoid the Nightquakes. Once the crew members is awake give them the code with the thin lead custard. They will then give you the code for the security door. You can now return to the door and go through. From the forest glide go North East and get the silver tray and then. Go also to the observatory and get the dark glasses. From the pink room you need to get the cut.

Return to Platform C and go down to the storeroom. Wear the orange armour and dark glasses and make sure you are in possession of the laser and linked cylinders. You can now repair the snowboard track. Using the keys you found in the maze enter the snowboard, start it by turning the key.

Now make sure you have got the toolbox, silver tray, hat, cut and the extinguisher. Go to Platform D and descend the ladder. From the bottom go North, through the ice tunnel until you reach the massive wall. Here you can open the toolbox with the sword to it. From here climb Jacob's ladder until you reach the wide ledge. Drop the cut. This will go about removing the stone to let you carry on. Climb the ramp and when you reach the T-junction use the silver tray. Then make your way to the control room. After entering you will see a tunnel with a rather menacing figure. Now play or blow the flute which will shatter the boards. You now have to extinguish the flames with the fire extinguisher using **PROVA ECHTSCHNEIBER**. You can now return the ship to state pilot by pulling another lever.

### \*\*\*\*\* Fred Major \*\*\*\*\*

## SCORING

You score points for each of the following achievements

1. Operating the coffin.
2. Successfully avoiding coffin.
3. Reaching the top of the elevator shaft.
4. Being unscathed.
5. Using the cylinder.
6. Using the video screen.
7. Filling the space-ramp.
8. Using the screen at driver control.
9. Repairing the jetpack drive.
10. Obtaining the laser.
11. Making the flames re-appear.
12. Learning the security code.
13. Operating the security door.
14. Repairing the snowboard track.
15. Starting the snowboard.
16. Removing the massive wallboard.
17. Clearing the wide ledge of stone.
18. Destroying the portable laser.
19. Removing the jetpack from the control room.
20. Returning the ship to autopilot.

Sometimes after completing one of these tasks the score doesn't register, however the score will usually be updated later.

## GENERAL HINTS

To avoid the tedious web journey collect the handigan and stop off the web. Wait until the game says you had better match speeds. Then you should **SHOOT GUN**. This will place you below one of the platforms. This is however a one-way journey. To get on use the updated trigger in the 'Hills' which will take you back across the web. It can also be used to return to the 'Hills'.

In the area beyond the security door use the helicopter from the under pit to climb the 'Hills'.

## HELP WANTED \*\*\*\*\* HELP WANTED \*\*\*\*\* HELP WANTED \*\*\*\*\*

Just one try for help this time. L.D. Baxter of Here is absolutely stuck on **QUENTAU 2** (hope that I have spell that correctly it could be **QUENTAWON**)

He asks where is the transporter? I think that he's done everything right but there must be one thing wrong. Also when he has crossed the sea and gone into the dungeons he cannot get on the game stage and an error message is produced. It is different each time. He asks if there is something wrong with the game or the disk or is he doing something wrong.

Right so, there is this issue's challenge. Don't stand there reading this, get busy and solve L.D. Baxter's problem.

The plus goes out again for more maps and still in the next bit, it's getting rather hard here in the dev and it needs filling up. Has anyone got the relation and maps to Wars in Paradise. I have seen the maps before but I'll be pleased if I can find the name of Alan Lee that they appeared in.

Anyway, see you next time. Bright eyed and bushy tailed ready for plenty of excellent tips.

Send your hints, tips and maps to

The Tipster  
New Atari User  
P. O. BOX 54  
Stafford  
ST16 1DR

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## New XL/XE software

With the bulk of new commercial software originating in Poland and Germany it's easy to overlook the continuing evolution of 16-bit software on the other side of the Atlantic. While Atari Corporation attempts to reverse their losses with promotions of Pac-Man, Jaggers and other exotic creatures, several other organizations have remained loyal to the 8-bit. Arries Software of New York is a rare company to the Atari scene and its President Elms Knudt says that inspiration has been gained from the lack of quality in current computer games. He aims to fill the gap with inexpensive, user-friendly, enjoyable software. A tall order?

Arries's FURY is described as an action adventure though in reality it's a simple shoot 'em up. Your joystick controls an unnamed hero whose role is to retake

# FURY

## The Wrath of Taljun Cathu

land invaded by an evil wizard named Taljun Cathu. There are five different worlds (fire, rock, alien, insect and fire), each constructed from several screens viewed from an overhead perspective. The minutely proportioned hero can walk and fire single shots in any of the joystick directions. Your aim is to annihilate a variety of adverse inhabitants who otherwise live back of you. You must also collect various objects that can aid in your advantage. Some items bring you extra health, some extra wealth and

others are rather unpleasant! Occasionally you may enter a shop and providing you're allowed sufficient cash you can purchase special capabilities - faster walking speed, increased fire power, fireballs, confusion spells, limited shields and 'Armageddon' smart bombs. However, I completed the first level without requiring any extras.

Arries describe the

graphics as state of the art but I'm not sure which device they are referring to. The screens are very straightforward indeed and the text is excessively busy and difficult to read. Some of the numbers are quite well drawn but the game is clearly confined by unappreciated programming techniques. Sound effects and music are basic. In more ways than one!

Playing Fury is like entering a limbo-world. It's reminiscent of those addictive little arcade games of the early 1980's - good fun, but a million miles from the technical standard of modern day entertainment. I had high hopes but, sadly, I must conclude that Arries will have to do much better than this if they are to accomplish their President's commendable objectives.

Arries Software can be reached at P.O. Box 1222, Riverdale Station, New York, NY 10471-1222, USA.

Title: **FURY**  
Supplier: **Arries Software**  
Price: **£26.95 inclusive**  
Format: **Disk**  
Reviewer: **Paul Wilson**



# MATH ENCOUNTER

Almost all of the computer programmes that aim to teach maths do so by creating a game which is dependent on the user answering a number of numerical problems. Math Encounter is no different but is somewhat unique in being one of the very earliest of this type of program that looks as good today as when it was first released.

The first thing that sets Math Encounter apart is that it runs as a ROM cartridge so is accessible to every Atari owner. The second is that it was designed and programmed by Professor John V. Hua who, presumably, is qualified in the education field. It certainly looks that way when the quality of the program is considered. The game itself is quite simple with four alien spacecraft at the top of the screen and your 'Hypersonic Missile Craft' at the bottom. You choose the starting level and the discipline from addition, subtraction, multiplication and division and the first problem comes rolling along the top of the screen.

On the first few levels the problems are

quite easy and you have a good deal of time to work out the answer. Each of the four craft at the top of the screen has a number, only one of which is correct. You simply fire a missile at the ship you think has the right answer. If correct you score points and the next problem rolls on, but if you did not get it right then the correct ship begins to flash allowing you to shoot it and progress to the next problem. Initially the problems are quite easy and most children who have learned basic maths skills should be able to cope and have fun doing so. On the first few levels the screen can be frozen allowing the child, or a parent, to study the answer. On the highest levels however even the most agile extended adult may find things a little harder!

Levels 5 and 6 increase the arcade element of the game requiring you to keep an eye on fuel, avoid meteorites and collect fuel pods as you attempt to answer the questions. These levels have you to retain the problem in your mind rather than study it as soon as it is easy to

linger in the path of a falling meteorite while working out the answer by looking at the problem.

The graphics are fairly simple but quite adequate for this type of program but what has kept the program relevant today is a good, sound understanding of the methods of teaching maths. There is just the right balance of game playing and learning, making Math Encounter ideal for all ages. The only thing that seems to be missing is the ability to run problem types but then children are normally taught only one concept at a time so this is not a major problem.

The surprise is that this professionally produced and boxed program has, seemingly, only just surfaced in the UK. It should certainly have been available from the beginning but we should be grateful that there it did not disappear long ago as most educational programs have done. Definitely one to put in your educational shopping list.

Title: **MATH ENCOUNTER**  
Supplier: **Micro Discount**  
Price: **£ 5.95**  
Format: **ROM cartridge**  
Reviewer: **Les Edgingham**

# TRANSDISK IV

## SOLVING SOME PROBLEMS

**O** Is not another article on TransDisk IV, haven't there been enough already? Well, this article is different. While all other articles have taken a look at this brilliant piece of software and pointed out a few problems, this article actually looks at how to solve them!

### ENHANCED DENSITY PROBLEMS

The first problem is with the 1050 drive. Whereas A10 users can use DOS 2.0 and XFDISK users can use a double density 1050-1050 format or Mydos 4.0 to transfer TransDisk files from one disk to another, an 8080 owners get stuck with a little problem. DOS 2.0, and in fact all other enhanced density DOSes, mess up the TransDisk sectors and therefore cause all sorts of trouble. The only way around this problem was to use DOS 2.0 like an 800 counterpart. This however meant that sectors 700 to 800 became unavailable to DOS. That's 200 sectors of right stores the data on every disk you use. What a waste! On top of that, if TransDisk does some any games onto these sectors (which will happen when all other sectors are full), then those games too will become unavailable to DOS 2.0. Now, at last, there is an alternative.

The first thing to do is to format a disk. It really is necessary that you start off with a totally blank disk so don't try to use a disk which has already got some files on it. This disk must be formatted with DOS 2.0. Do not try to use DOS 2.0 store listing 1 only works with DOS 2.0. Now go back into Basic, and type in program listing 1, checking it as you go with TYPE

*Raphael Espino has some answers to some of the more difficult aspects of transferring from tape to disk*

II. Once this is done, now it came your blank disk, and then RUN it. If all goes well then you should be presented with the All Done! message. Now go back into DOS 2.0 by typing DOS, and select the E option (BASIC LOADS from the menu, and when asked for the filename type in BASIC.COM and press RETURN. After that you should press RETURN again. Now if you look in the top right hand corner of the screen you will see that instead the usual IBM OPERATING SYSTEM 2 VERSION 2.00 message, a new IBM OPERATING SYSTEM 2 VERSION 2.00 message will be displayed, with the 2.0TD in inverse video. The TD stands for TransDisk, and is there to remind you that this DOS can ONLY be used with TransDisk game source disks. WARNING! DO NOT TRY TO USE THIS DOS WITH ANY OTHER DISKS since you may corrupt them. Also do not save any of her files into the DOS 2.0TD disk except for Listings 2 and 3.

You should now save the DOS files onto your disk by using the H option from the menu (WRITE DOS FILES), and then clearly label this disk so that you don't inadvertently use it for anything other than TransDisk files.

If you have managed it this far then congratulations, you can now fully use TransDisk IV along with your 1050 drive.

### SALVAGING CORRUPT DISKS

The remaining problem now is what to do with those TransDisk IV disks which were corrupted with DOS 2.0. The best thing you can do is to format a blank disk using TransDisk IV and the same menu (E) or (L) as on the disk you want to fix. Then using your new DOS 2.0TD copy all the files from the corrupted disk to the new one, using the O option (COPY FILE). Do not use the J option (DUPLICATE) since this would corrupt your new disk as well. Finally you can re-format your corrupted disk with TransDisk IV ready to save any new games on it.

### GAMES WON'T WORK?

If like me, you have found that some of the games listed in New Atari User's list of games that have been successfully

```

01 1 000 0
02 2 000 0 TRANSDISK.FIX 0
03 3 000 0 LISTING 1 0
04 4 000 0 BY BARKARD BARKING 0
05 5 000 0 .....
06 6 000 0 NEW FORMED DOOR - APRIL 1980
07 7 000 0
08 8 000 0
09 9 000 0
10 10 0000 0000 0000 0000 01,0,0,"BARKARD
"
11 11 0000 0100 0101 1000 100 0
12 12 000 000 01,0,0,000 110
13 13 000 01,0,0 00
14 14 000 7 17 "000,00000"
15 15 0000 0000 100,000,00,11,7,70,107,107,117
0,121,00,07
16 16 000 0000 100,100,001,07,00,100,074,14
0,100,00,000
17 17 000 0000 100,100,01,01,000,110,101,07
0,00,000,000
18 18 000 0000 001,00,00,00,000,0,000,0,00,
017,"0
    
```

Listing 1

```

01 0000 0000 0000 0000 0000 0000 0000 0000 0000
02 0000 00 00 00000000 0000 0000 0000
03 0000 0000 0000 0000 0000 0000 0000
04 0000 0000 0000 0000 0000 0000 0000
05 0000 0000 0000 0000 0000 0000 0000
06 0000 0000 0000 0000 0000 0000 0000
07 0000 0000 0000 0000 0000 0000 0000
08 0000 0000
09 0000 0000 0000 0000
10 0000 0000 0000 0000 0000 0000 0000
11 0000 0000 0000 0000 0000 0000 0000
12 0000 0000 0000 0000 0000 0000 0000
13 0000 0000 0000 0000 0000 0000 0000
14 0000 0000 0000 0000 0000 0000 0000
15 0000 0000 0000 0000 0000 0000 0000
16 0000 0000 0000 0000 0000 0000 0000
17 0000 0000 0000 0000 0000 0000 0000
18 0000 0000 0000 0000 0000 0000 0000
19 0000 0000 0000 0000 0000 0000 0000
20 0000 0000 0000 0000 0000 0000 0000
21 0000 0000 0000 0000 0000 0000 0000
22 0000 0000 0000 0000 0000 0000 0000
23 0000 0000 0000 0000 0000 0000 0000
24 0000 0000 0000 0000 0000 0000 0000
25 0000 0000 0000 0000 0000 0000 0000
26 0000 0000 0000 0000 0000 0000 0000
27 0000 0000 0000 0000 0000 0000 0000
28 0000 0000 0000 0000 0000 0000 0000
29 0000 0000 0000 0000 0000 0000 0000
30 0000 0000 0000 0000 0000 0000 0000
31 0000 0000 0000 0000 0000 0000 0000
32 0000 0000 0000 0000 0000 0000 0000
33 0000 0000 0000 0000 0000 0000 0000
34 0000 0000 0000 0000 0000 0000 0000
35 0000 0000 0000 0000 0000 0000 0000
36 0000 0000 0000 0000 0000 0000 0000
37 0000 0000 0000 0000 0000 0000 0000
38 0000 0000 0000 0000 0000 0000 0000
39 0000 0000 0000 0000 0000 0000 0000
40 0000 0000 0000 0000 0000 0000 0000

```

Listing 3

```

01 0000 0000 0000 0000 0000 0000 0000 0000 0000
02 0000 0000 0000 0000 0000 0000 0000 0000 0000
03 0000 0000 0000 0000 0000 0000 0000 0000 0000
04 0000 0000 0000 0000 0000 0000 0000 0000 0000
05 0000 0000 0000 0000 0000 0000 0000 0000 0000
06 0000 0000 0000 0000 0000 0000 0000 0000 0000
07 0000 0000 0000 0000 0000 0000 0000 0000 0000
08 0000 0000 0000 0000 0000 0000 0000 0000 0000
09 0000 0000 0000 0000 0000 0000 0000 0000 0000
10 0000 0000 0000 0000 0000 0000 0000 0000 0000
11 0000 0000 0000 0000 0000 0000 0000 0000 0000
12 0000 0000 0000 0000 0000 0000 0000 0000 0000
13 0000 0000 0000 0000 0000 0000 0000 0000 0000
14 0000 0000 0000 0000 0000 0000 0000 0000 0000
15 0000 0000 0000 0000 0000 0000 0000 0000 0000
16 0000 0000 0000 0000 0000 0000 0000 0000 0000
17 0000 0000 0000 0000 0000 0000 0000 0000 0000
18 0000 0000 0000 0000 0000 0000 0000 0000 0000
19 0000 0000 0000 0000 0000 0000 0000 0000 0000
20 0000 0000 0000 0000 0000 0000 0000 0000 0000
21 0000 0000 0000 0000 0000 0000 0000 0000 0000
22 0000 0000 0000 0000 0000 0000 0000 0000 0000
23 0000 0000 0000 0000 0000 0000 0000 0000 0000
24 0000 0000 0000 0000 0000 0000 0000 0000 0000
25 0000 0000 0000 0000 0000 0000 0000 0000 0000
26 0000 0000 0000 0000 0000 0000 0000 0000 0000
27 0000 0000 0000 0000 0000 0000 0000 0000 0000
28 0000 0000 0000 0000 0000 0000 0000 0000 0000
29 0000 0000 0000 0000 0000 0000 0000 0000 0000
30 0000 0000 0000 0000 0000 0000 0000 0000 0000
31 0000 0000 0000 0000 0000 0000 0000 0000 0000
32 0000 0000 0000 0000 0000 0000 0000 0000 0000
33 0000 0000 0000 0000 0000 0000 0000 0000 0000
34 0000 0000 0000 0000 0000 0000 0000 0000 0000
35 0000 0000 0000 0000 0000 0000 0000 0000 0000
36 0000 0000 0000 0000 0000 0000 0000 0000 0000
37 0000 0000 0000 0000 0000 0000 0000 0000 0000
38 0000 0000 0000 0000 0000 0000 0000 0000 0000
39 0000 0000 0000 0000 0000 0000 0000 0000 0000
40 0000 0000 0000 0000 0000 0000 0000 0000 0000

```

transferred will not work on your 1050-drive; then the most likely problem is that DOS 3.1 corrupted the game file. In this case you should try to pass the gamefile from cassette to disk again, but this time use an uncorrupted disk. Hopefully this time you should find that the games will work perfectly. One other note on copying files from one disk to another, and this applies to all disk drives, is that most DOS's including DOS 3.0/3.1 cannot copy the hard sectors, and on the 1050 drive not all the sectors above 608 can be copied. This is not a problem if you only want to copy game files, but if you want to copy the meta files from one disk to another then this can cause problems. Probably the best thing to do is to use a sector editor/copier or some similar program to copy these sectors from one disk to another.

## OUT OF MEMORY PROBLEMS?

The other problem that I've set out to solve affects all unexpanded 600K, and 650K owners (and indeed all 640K machines). If you own one of these machines then you will

most likely know that there are some games which simply can't be transferred to disk due to lack of memory. If you do try to transfer one of these games, then after about 15 minutes or so of loading the game you are presented with the 'OUT OF MEMORY' message. Highly frustrating. You may think you can use the APPEND function on these games, but then you discover that the game comes with a small loader and a single very large game file, and it is this large file that simply won't fit. This therefore resolves the APPEND option problem for these reasons. What's worse some of the best games fall into this category - Xytron, Headball, Fantastic Soccer, Kick Off, Cosmic Patrol amongst others.

So what can you do about it? Well wouldn't it be nice if you could run these up! This long file into two smaller ones, which could then be loaded with TransDisk 707? Well, that is exactly what program Listing 3 does. Perhaps I should warn you before going any further that it takes around an hour to pass each of these games onto disk in this way, but believe me, once you have passed them it is well worth it. Just think, you will now be able to load your favourite games in a minute or so, and no more 'OUT OF MEMORY! Anyway let's get on with it. All DOS's owners should first install DOS 2.0 as described above,

810 owners should use standard DOS 3.0, and SPARC owners a TransLink IV compatible double density DOS (SpartaDOS or Mydos 4.0). New type in Listing 2 checking it with TYPE II Save it to disk, and then repeat the process for Listing 3. 1000 owners should save both these programs onto their DOS 3.0/2D disk, all other drivers can use any disk they want.

You will now need a blank cassette. For good quality 60- or 90-minute cassette should do. If you are tempted to use a lower quality cassette, then remember that the better the cassette, the higher the chance of a successful transfer on your first attempt. The process is as follows:

**Step 1:** First insert your blank cassette into your recorder, rewind the cassette to the beginning, then wind it in a couple of counts to get it past the leader. LISTING 1 and LISTING 2 from disk. You should now hear two beeps. Press down both the PLAY and RECORD buttons on your cassette recorder and then press the RETURN key. The program should now save itself to cassette. The first step is now complete. You need only do this step the first time round, after this the program will be saved on your cassette and you can then use it as many times as you wish.

**Step 2:** This step is only necessary if the game that you want to transfer has a leader (notice, a leader is a short piece of tape which leads in, normally displays a loading screen and then loads in the game itself from the cassette, if the game doesn't have a leader then skip this step. If it does then you should pass this leader onto a disk in the usual way. This is best up with TransLink IV, select the standard cassette read option, select a one stage load, and then when it has finished loading, save it to a disk using the Write option. The only difference is that this file should be saved to disk with a .LHM extension instead of the usual .OBJ extension. So if for example you were transferring Zyxen, then you would save the leader onto your disk as ZYXEN.LHM. This file should be saved onto a TransLink XL source disk. If this game has more than one leader before the main piece of tape, then you should load them all in together by using a multiple stage load, with as many stages as leaders, and then save the file with a .LHM extension.

Note: It is a good idea to reset the cassette decoder to 000 before you start transferring the leader, and then make a note of the counter when the leader has been transferred, just in case a loading error occurs later on. If this is the case, then you should rewind the cassette back to the beginning, reset the counter, and then start it on in the normal order, ready for your next attempt.

**Step 3:** Put the cassette onto which you saved Listing 2 in your deck, rewind it to the beginning, switch your computer AND disk drive all faster reformatting the disk first) and then press PLAY and switch your COMPUTER ONLY back on again while holding down both the SHIFT and OPTION keys, and then press RETURN. The program should now load from cassette. Once it has loaded you should hear one beep, and then the cassette should stop. If this doesn't happen, then rewind and try again. If after a few goes you still haven't got it working, then Listing 2 has most likely not been saved properly, so you must repeat step 1 again.

Note: Even if you do have to repeat step 1, you do not have to repeat step 2. Step 2 need only be done once for each game that you wish to transfer.

**Step 4:** Now wind your blank cassette on a couple of counts, then replace your cassette with the cassette game you wish to transfer and press PLAY and then RETURN. The game will now start to load. At any time the cassette stops and the screen turns RED, then a loading error has occurred. If this happens then you will need to rewind the cassette (see note on step 2 if the game has a leader), and repeat steps 2 and 4 again. If however the cassette stops, you get a SCREEN screen and you hear two beeps then the load was successful.

**Step 5:** You should now insert your blank cassette, reset the cassette counter back to 000, depress both the PLAY and

RECORD keys on your deck and press RETURN. The game will now be saved onto your blank cassette in two halves. Once the first half has finished saving, the cassette will stop and you will hear another two beeps. When this happens write down the value of the counter in counter and press RETURN. The second half will now be saved.

**Step 6:** You have now split the large file into two smaller parts. This new version of the game, saved in two halves on your cassette is totally useless on its own and if you do attempt to load it then you will simply get a load error. Now you need to load up with TransLink IV and create your cassette until the counter reads 000. Then using the Standard cassette read option from the menu, pass the first half onto a TransLink XL source disk in the normal way, specifying a one stage load. When saving this file use a .L extension instead of a .OBJ extension. Then repeat process for the second half, only this time use a .2 extension. Again if you were transferring Zyxen you would save the first file as ZYXEN.1 and the second one as ZYXEN.2. If you get an error when loading the first half, then rewind the cassette back to 000 and repeat this step again. If you get an error while loading the second half then rewind the cassette back to the counter value that you wrote down in step 5 and try again. If you get several cassette read errors, always in the same place when using TransLink, then the most likely problem is that the file has not been saved properly. If this happens then you should go back to step 3, and start again. Note: All files should be saved under the name filename, with only the extension changing. So in the Zyxen example the files should be saved as ZYXEN.LHM, ZYXEN.1 and ZYXEN.2 for the leader if there is one, first and second halves respectively. If you don't use this convention then Listing 3 will NOT work. An another example should read be saved as FERRARIAL.LHM, FERRARIAL.1 and FERRARIAL.2.

**Step 7:** If you have made it this far, then the hardest part has been done and all that is left is to link the files back together again. This is considerably easier and much less error prone than splitting them up again. This is where Listing 3 comes in. You should now re-load LISTING 3 from disk and RUN it. You will now be asked for a file name. If you want to see the disk directory then you should press RETURN on the menu at this stage. Otherwise you should type in the same file name that you used to save the file to disk, but WITHOUT the extension. So if you were transferring Zyxen, the files for which were saved as ZYXEN.LHM, ZYXEN.1, ZYXEN.2, you would simply enter ZYXEN, so if it is necessary, but it will still work if you do include one. For simplicity, only one disk drive is supported, so people who own two drives will still have to swap disks like the rest of us. You will now be asked if the game had a leader. If it has then press Y otherwise press N. All you have to do now is follow the prompts. These prompts will ask you to insert the right disks at the right times. The source disk and the three main which you saved the split files (ZYXEN.LHM, ZYXEN.1 AND ZYXEN.2 in the example), and these will be referred to by the name of the file. So you will be asked to insert, for example, the ZYXEN.LHM disk or the ZYXEN.1 disk or whatever. The destination disk is the disk on which you want the final working version of the game to be saved on. Both the source and destination disk must be TransLink IV source disks. The source and destination files may be on the same disk, as they may all be on different disks, it is entirely up to you. You must however have enough free sectors on the destination disk to fit the whole joined file in. As a guide you will need to add up the number of sectors taken up by the leader if there is one, and the first and second halves of the game. So if for example the length of the files were as follows:

```
ZYXEN.LHM      = 148 SECTORS
ZYXEN.1        = 188 SECTORS
ZYXEN.2        = 187 SECTORS

TOTAL          = 513 SECTORS
```

```

01 1 000 *****
02 2 000 0          *****
03 3 000 0          *****
04 4 000 0          *****
05 5 000 0          *****
06 6 000 0          *****
07 7 000 0          *****
08 8 000 0          *****
09 9 000 0          *****
10 10 000 0         *****
11 11 000 0         *****
12 12 000 0         *****
13 13 000 0         *****
14 14 000 0         *****
15 15 000 0         *****
16 16 000 0         *****
17 17 000 0         *****
18 18 000 0         *****
19 19 000 0         *****
20 20 000 0         *****
21 21 000 0         *****
22 22 000 0         *****
23 23 000 0         *****
24 24 000 0         *****
25 25 000 0         *****
26 26 000 0         *****
27 27 000 0         *****
28 28 000 0         *****
29 29 000 0         *****
30 30 000 0         *****
31 31 000 0         *****
32 32 000 0         *****
33 33 000 0         *****
34 34 000 0         *****
35 35 000 0         *****
36 36 000 0         *****
37 37 000 0         *****
38 38 000 0         *****
39 39 000 0         *****
40 40 000 0         *****
41 41 000 0         *****
42 42 000 0         *****
43 43 000 0         *****
44 44 000 0         *****
45 45 000 0         *****
46 46 000 0         *****
47 47 000 0         *****
48 48 000 0         *****
49 49 000 0         *****
50 50 000 0         *****
51 51 000 0         *****
52 52 000 0         *****
53 53 000 0         *****
54 54 000 0         *****
55 55 000 0         *****
56 56 000 0         *****
57 57 000 0         *****
58 58 000 0         *****
59 59 000 0         *****
60 60 000 0         *****
61 61 000 0         *****
62 62 000 0         *****
63 63 000 0         *****
64 64 000 0         *****
65 65 000 0         *****
66 66 000 0         *****
67 67 000 0         *****
68 68 000 0         *****
69 69 000 0         *****
70 70 000 0         *****
71 71 000 0         *****
72 72 000 0         *****
73 73 000 0         *****
74 74 000 0         *****
75 75 000 0         *****
76 76 000 0         *****
77 77 000 0         *****
78 78 000 0         *****
79 79 000 0         *****
80 80 000 0         *****
81 81 000 0         *****
82 82 000 0         *****
83 83 000 0         *****
84 84 000 0         *****
85 85 000 0         *****
86 86 000 0         *****
87 87 000 0         *****
88 88 000 0         *****
89 89 000 0         *****
90 90 000 0         *****
91 91 000 0         *****
92 92 000 0         *****
93 93 000 0         *****
94 94 000 0         *****
95 95 000 0         *****
96 96 000 0         *****
97 97 000 0         *****
98 98 000 0         *****
99 99 000 0         *****
100 100 000 0        *****

```

Listing 3

```

01 000 *****
02 000 0          *****
03 000 0          *****
04 000 0          *****
05 000 0          *****
06 000 0          *****
07 000 0          *****
08 000 0          *****
09 000 0          *****
10 000 0          *****
11 000 0          *****
12 000 0          *****
13 000 0          *****
14 000 0          *****
15 000 0          *****
16 000 0          *****
17 000 0          *****
18 000 0          *****
19 000 0          *****
20 000 0          *****
21 000 0          *****
22 000 0          *****
23 000 0          *****
24 000 0          *****
25 000 0          *****
26 000 0          *****
27 000 0          *****
28 000 0          *****
29 000 0          *****
30 000 0          *****
31 000 0          *****
32 000 0          *****
33 000 0          *****
34 000 0          *****
35 000 0          *****
36 000 0          *****
37 000 0          *****
38 000 0          *****
39 000 0          *****
40 000 0          *****
41 000 0          *****
42 000 0          *****
43 000 0          *****
44 000 0          *****
45 000 0          *****
46 000 0          *****
47 000 0          *****
48 000 0          *****
49 000 0          *****
50 000 0          *****
51 000 0          *****
52 000 0          *****
53 000 0          *****
54 000 0          *****
55 000 0          *****
56 000 0          *****
57 000 0          *****
58 000 0          *****
59 000 0          *****
60 000 0          *****
61 000 0          *****
62 000 0          *****
63 000 0          *****
64 000 0          *****
65 000 0          *****
66 000 0          *****
67 000 0          *****
68 000 0          *****
69 000 0          *****
70 000 0          *****
71 000 0          *****
72 000 0          *****
73 000 0          *****
74 000 0          *****
75 000 0          *****
76 000 0          *****
77 000 0          *****
78 000 0          *****
79 000 0          *****
80 000 0          *****
81 000 0          *****
82 000 0          *****
83 000 0          *****
84 000 0          *****
85 000 0          *****
86 000 0          *****
87 000 0          *****
88 000 0          *****
89 000 0          *****
90 000 0          *****
91 000 0          *****
92 000 0          *****
93 000 0          *****
94 000 0          *****
95 000 0          *****
96 000 0          *****
97 000 0          *****
98 000 0          *****
99 000 0          *****
100 000 0          *****

```

you would need at least 811 free sectors on your destination disk.

If you have the appropriate number of free sectors or more left on your destination disk, then you are okay, otherwise you will need another destination disk that has enough free sectors on it. One thing to note is that the loader, and the two halves of the game do not all have to be on the same source disk, each file can be on a separate disk if you wish. If both the source and destination are the same disk, then there is no need to swap-disks when prompted, just press RETURN. The destination file will now be saved with an .GEM extension and can be run in the normal way. If at any time an error occurs, you will be informed of this. If at any time you make a mistake and you want to restart the program then stop the program with the BREAK key and type RETURN and press RETURN.

Note: Listing 3 will not delete the LINK.1 or 2 files, so if you want to get rid of them after they have been linked, then you will have to delete them with a DOS.

## NOT SO COMPLICATED

The above procedure can seem quite complicated at first, but you will soon get the hang of it. In fact most of the stuff is quite obvious (like press RETURN or press PLAY and RECORD). If however you do wish to have a range of "parties" mode, then you can use a cassette game which has a very short loading time, and which you have previously already transferred to TOS in the usual manner. Using a short cassette for practicing

has the advantage that it will normally take only 10 to 15 minutes to go through the whole procedure, and it gives you confidence to tackle the larger games.

## TECHNICAL NOTES

The cassette loader program (Listing 3) is rather crude since by necessity it has to take up very little memory, therefore leaving as much as possible for the game. It even switches the screen off to gain an extra 1K of memory, and the main rule itself is actually hidden in the ROM under the OS (ROM's), this means that it should be possible to pass a game even if it uses up all 60K of ROM.

Listing 3 should only be used with Atari Basic and not Turbo Basic. If you do try and use it with Turbo Basic then it will lock up. The reason for this is that the program assumes that certain areas of memory will be empty, which will be the case in Atari Basic but not in Turbo Basic. Sorry, but I wanted to keep the listing as short and as simple as possible, and besides there is no real gain from using this program in Turbo Basic anyway.

Finally, you will only be able to pass standard cassettes with these programs. Any cassettes that have been saved in the non-standard format will not load into Listing 3. I have not yet come across any non-standard format cassettes which can't be transferred in the normal way on a GEM machine, but there may be some out there.

I hope that you can now transfer all those problem tapes.

# SLIME BLASTERS

**T**he final listing in this series is a game called **SLIME BLASTERS** and, although simple, it demonstrates the use of the three machine-code routines contained with the **INVASION** game, published in the last issue. If you have the **Invasion** listing then you can save yourself some time by **LD**ing out from 24:000-24:00F and using these on the basis of this issue's listing. The listing is heavily **HEX**ed and should be fairly easy to understand, so type it in and don't forget to save a copy before you **RUN** it.

## HOW TO PLAY

The game involves two players, using both joysticks, who move ships along the edges of the display, blasting globules of space-slime. The first ship to reach the target area, set before playing, wins!

Once you have finished playing the game, you may want to use the routines that move the ships, sound the effects and move the missiles, in your own programs, if so then read on.

## HOW TO USE THE ROUTINES

The sprite routines use the **Atari** as a player) and missile routines work in conjunction with the **PMO** (Player Missile Object) system. Before calling the routines you must:

- 1 Store all data for the player images and sound effects in memory - Lines 140 - 415
- 2 Set up your display (Playfield) - Lines 790 - 798
- 3 Before each game, clear a page at 10300 and store movement table - Lines 799 - 79E
- 4 Set up the **PMO** system - Lines 799 - 79E
- 5 If you are using the sound routine, enter a line equal to line 795

## THE SPRITE ROUTINE

To use the sprite routine you must have some sprite image data in memory. The computer interprets this data in the same way as **OSAPRSC0** (not data, the difference being that sprite data can be more than eight bytes long).

The format for the sprite call is:

**CALL** 25FH (SPRITE), (SPRITE), (SFR), (PMS), (M), (FL), (PMS), (SFR), (SFR), (DIR), (LNS), (LNF), (STX), (STY), (YMN), (YMB), (PSX), (PSY), (CLM), (CVL)

**Steve Lakey concludes his series by letting you in on the programming secrets behind his games**

The parameters in this call are as follows:

**SPRITE** - Range: 0-15

This is the address of the routine, which can be stored anywhere in available **RAM**. As you can see, it has to be entered twice at the beginning of the calling command.

**SFR** - Range: 0 - 3

This is the sprite number, equal to the player number.

**PMS** - Range: See text

This is the base page of your **PMO** area (**PMO** **AREA** **TABLE**). If you use a different **PMO** area to the one in Listing 6, then it must be on a 2K boundary.

**M** - Range: Not Used

This is the address of the image data for this particular sprite. If there is more than one frame in your sprite, then each frame should be the same size and be placed in memory, one after the other.

**FL** - Range: 1 - 64

This holds the length of a frame, even if there is only one.

**PMS** - Range: 1 - 255

This holds the number of frames.

**SFR** - Range: See text

This is the Animation Type:

0 = Wrap around animation

(eg. 1, 2, 3, 4 - 1, 2, 3, 4 - 1, 2, 3, 4)

1 = Detached animation

(eg. 1, 2, 3, 4 - 4, 3, 2, 1 - 1, 2, 3, 4)

Adding a 0 to **SFR** will direct the routine to test joystick 2, as long as joysticks have been enabled with **040**.

**ASP** - Range: 1 - 255

This is the Animation Speed, 1=Fast 255=Very Slow

continued on page 28



02 100 000 0  
 03 100 000 0  
 04 100 000 0  
 05 100 000 0  
 06 100 000 0  
 07 100 000 0  
 08 100 000 0  
 09 100 000 0  
 10 100 000 0  
 11 100 000 0  
 12 100 000 0  
 13 100 000 0  
 14 100 000 0  
 15 100 000 0  
 16 100 000 0  
 17 100 000 0  
 18 100 000 0  
 19 100 000 0  
 20 100 000 0  
 21 100 000 0  
 22 100 000 0  
 23 100 000 0  
 24 100 000 0  
 25 100 000 0  
 26 100 000 0  
 27 100 000 0  
 28 100 000 0  
 29 100 000 0  
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 31 100 000 0  
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 34 100 000 0  
 35 100 000 0  
 36 100 000 0  
 37 100 000 0  
 38 100 000 0  
 39 100 000 0  
 40 100 000 0  
 41 100 000 0  
 42 100 000 0  
 43 100 000 0  
 44 100 000 0  
 45 100 000 0  
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 72 100 000 0  
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 75 100 000 0  
 76 100 000 0  
 77 100 000 0  
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 81 100 000 0  
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 84 100 000 0  
 85 100 000 0  
 86 100 000 0  
 87 100 000 0  
 88 100 000 0  
 89 100 000 0  
 90 100 000 0  
 91 100 000 0  
 92 100 000 0  
 93 100 000 0  
 94 100 000 0  
 95 100 000 0  
 96 100 000 0  
 97 100 000 0  
 98 100 000 0  
 99 100 000 0  
 100 100 000 0

01 100 000 0  
 02 100 000 0  
 03 100 000 0  
 04 100 000 0  
 05 100 000 0  
 06 100 000 0  
 07 100 000 0  
 08 100 000 0  
 09 100 000 0  
 10 100 000 0  
 11 100 000 0  
 12 100 000 0  
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 14 100 000 0  
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 16 100 000 0  
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 68 100 000 0  
 69 100 000 0  
 70 100 000 0  
 71 100 000 0  
 72 100 000 0  
 73 100 000 0  
 74 100 000 0  
 75 100 000 0  
 76 100 000 0  
 77 100 000 0  
 78 100 000 0  
 79 100 000 0  
 80 100 000 0  
 81 100 000 0  
 82 100 000 0  
 83 100 000 0  
 84 100 000 0  
 85 100 000 0  
 86 100 000 0  
 87 100 000 0  
 88 100 000 0  
 89 100 000 0  
 90 100 000 0  
 91 100 000 0  
 92 100 000 0  
 93 100 000 0  
 94 100 000 0  
 95 100 000 0  
 96 100 000 0  
 97 100 000 0  
 98 100 000 0  
 99 100 000 0  
 100 100 000 0

continued





# SLIME BLASTERS

```

0000 0000 0000 0000 0000 0000 0000 0000
01 0100 0000 0000 0000 0000 0000 0000
02 0200 0000 0000 0000 0000 0000 0000
03 0300 0000 0000 0000 0000 0000 0000
04 0400 0000 0000 0000 0000 0000 0000
05 0500 0000 0000 0000 0000 0000 0000
06 0600 0000 0000 0000 0000 0000 0000
07 0700 0000 0000 0000 0000 0000 0000
08 0800 0000 0000 0000 0000 0000 0000
09 0900 0000 0000 0000 0000 0000 0000
10 1000 0000 0000 0000 0000 0000 0000
11 1100 0000 0000 0000 0000 0000 0000
12 1200 0000 0000 0000 0000 0000 0000
13 1300 0000 0000 0000 0000 0000 0000
14 1400 0000 0000 0000 0000 0000 0000
15 1500 0000 0000 0000 0000 0000 0000
16 1600 0000 0000 0000 0000 0000 0000
17 1700 0000 0000 0000 0000 0000 0000
18 1800 0000 0000 0000 0000 0000 0000
19 1900 0000 0000 0000 0000 0000 0000
20 2000 0000 0000 0000 0000 0000 0000
21 2100 0000 0000 0000 0000 0000 0000
22 2200 0000 0000 0000 0000 0000 0000
23 2300 0000 0000 0000 0000 0000 0000
24 2400 0000 0000 0000 0000 0000 0000
25 2500 0000 0000 0000 0000 0000 0000
26 2600 0000 0000 0000 0000 0000 0000
27 2700 0000 0000 0000 0000 0000 0000
28 2800 0000 0000 0000 0000 0000 0000
29 2900 0000 0000 0000 0000 0000 0000
30 3000 0000 0000 0000 0000 0000 0000
31 3100 0000 0000 0000 0000 0000 0000
32 3200 0000 0000 0000 0000 0000 0000
33 3300 0000 0000 0000 0000 0000 0000
34 3400 0000 0000 0000 0000 0000 0000
35 3500 0000 0000 0000 0000 0000 0000
36 3600 0000 0000 0000 0000 0000 0000
37 3700 0000 0000 0000 0000 0000 0000
38 3800 0000 0000 0000 0000 0000 0000
39 3900 0000 0000 0000 0000 0000 0000
40 4000 0000 0000 0000 0000 0000 0000
41 4100 0000 0000 0000 0000 0000 0000
42 4200 0000 0000 0000 0000 0000 0000
43 4300 0000 0000 0000 0000 0000 0000
44 4400 0000 0000 0000 0000 0000 0000
45 4500 0000 0000 0000 0000 0000 0000
46 4600 0000 0000 0000 0000 0000 0000
47 4700 0000 0000 0000 0000 0000 0000
48 4800 0000 0000 0000 0000 0000 0000
49 4900 0000 0000 0000 0000 0000 0000
50 5000 0000 0000 0000 0000 0000 0000
51 5100 0000 0000 0000 0000 0000 0000
52 5200 0000 0000 0000 0000 0000 0000
53 5300 0000 0000 0000 0000 0000 0000
54 5400 0000 0000 0000 0000 0000 0000
55 5500 0000 0000 0000 0000 0000 0000
56 5600 0000 0000 0000 0000 0000 0000
57 5700 0000 0000 0000 0000 0000 0000
58 5800 0000 0000 0000 0000 0000 0000
59 5900 0000 0000 0000 0000 0000 0000
60 6000 0000 0000 0000 0000 0000 0000
61 6100 0000 0000 0000 0000 0000 0000
62 6200 0000 0000 0000 0000 0000 0000
63 6300 0000 0000 0000 0000 0000 0000
64 6400 0000 0000 0000 0000 0000 0000
65 6500 0000 0000 0000 0000 0000 0000
66 6600 0000 0000 0000 0000 0000 0000
67 6700 0000 0000 0000 0000 0000 0000
68 6800 0000 0000 0000 0000 0000 0000
69 6900 0000 0000 0000 0000 0000 0000
70 7000 0000 0000 0000 0000 0000 0000
71 7100 0000 0000 0000 0000 0000 0000
72 7200 0000 0000 0000 0000 0000 0000
73 7300 0000 0000 0000 0000 0000 0000
74 7400 0000 0000 0000 0000 0000 0000
75 7500 0000 0000 0000 0000 0000 0000
76 7600 0000 0000 0000 0000 0000 0000
77 7700 0000 0000 0000 0000 0000 0000
78 7800 0000 0000 0000 0000 0000 0000
79 7900 0000 0000 0000 0000 0000 0000
80 8000 0000 0000 0000 0000 0000 0000
81 8100 0000 0000 0000 0000 0000 0000
82 8200 0000 0000 0000 0000 0000 0000
83 8300 0000 0000 0000 0000 0000 0000
84 8400 0000 0000 0000 0000 0000 0000
85 8500 0000 0000 0000 0000 0000 0000
86 8600 0000 0000 0000 0000 0000 0000
87 8700 0000 0000 0000 0000 0000 0000
88 8800 0000 0000 0000 0000 0000 0000
89 8900 0000 0000 0000 0000 0000 0000
90 9000 0000 0000 0000 0000 0000 0000
91 9100 0000 0000 0000 0000 0000 0000
92 9200 0000 0000 0000 0000 0000 0000
93 9300 0000 0000 0000 0000 0000 0000
94 9400 0000 0000 0000 0000 0000 0000
95 9500 0000 0000 0000 0000 0000 0000
96 9600 0000 0000 0000 0000 0000 0000
97 9700 0000 0000 0000 0000 0000 0000
98 9800 0000 0000 0000 0000 0000 0000
99 9900 0000 0000 0000 0000 0000 0000

```

```

, 00, 00, 0, 0, 0, 0
00 0000 0000 0, 0, 0, 0, 00, 00, 000, 007, 004, 1
00, 01, 0, 0, 0, 0
00 0000 0000 0, 0, 0, 0, 0, 00, 000, 000, 007, 0
00, 00, 0, 0, 0, 0, -0
10 0000 0000 0000 0000 0000 0000 0000
01 0000 0000 0, 0, 0, 0, 00, 00, 00, 00, 00, 00, 0
0, 0, 0, 0, 0, -0
00 0000 0000 0, 0, 00, 000, 00, 0, 0, 0, 0, 100, 0
0, 0, 0, 0, 0, -0
00 0000 0000 100, 000, 00, 0, 0, 0, 0, 0, 0, 0, 0
0, 0, 0, 0, -1
00 0000 0000 0000 0000 0000 0000
00 0000 0000 000, 000, 000, 000, 000, 000, 0, 0
0, 0, 0
00 0000 0000 100, 00, 100, 000, 000, 100, 0, 00
0, 0, 0
00 0000 0000 000, 100, 100, 000, 000, 100, 0, 0
0, 00, 0, 0
00 0000 0000 000, 00, 100, 000, 000, 100, 0, 00
00, 00, 0, -0
00 0000 0000 000, 00, 00, 0, 100, 000, 000, 100
0, 0, 00
00 0000 0000 0, 0, 0, 00, 0, 0, 100, 000, 000, 100
0, 00, 100
00 0000 0000 000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
0, 0, 0, 0, -0
00 0000 0000 10, 10, 10, 10, 0, 0, 0, 0, 0, 0, 0
0, 0, 0, 0, -0
00 0000 0000 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
0, 0, 0, 0, -0
00 0000 0000 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
00, 00, 00, 00, -0

```

**MOV** - Range: free text

A value from 0-7

- 0=Up 1=Up/Right 2=Right 3=Down/Right
- 4=Down 5=Down/Left 6=Left 7=Up/Left

Using a value of 00 would select joystick Control (See ATTN, add to this:

- +0 (No upwards movement)
- +2 (No downwards)
- +4 (No leftwards movement)
- +8 (No rightwards movement)

These values can be combined (e.g. 1+2 = 3, No Vertical Moved)

**LEN** - Range: 1 - 255

This is the length to move horizontally. When using joystick control, this equates the coordinate at which the sprite will stop, when moving left.

**LEV** - Range: 1 - 255

This is the length to move vertically. When using a joystick, it is equal to the coordinate at which the sprite will stop, when moving right.

**STX** - Range: 1 - 60

This is a horizontal stepping/restricted (e.g. 1 moves one step at a time, 2 moves two steps at a time), in effect, it changes the speed.

**STY** - Range: 1 - 60

Vertical Stepping. This value should not exceed the number of rows that you have included at either end of your image data, if it does, then your sprite will not clear itself properly.

**VMX** - Range: 00 - 000

The sprite will not be plotted, unless it is higher than this vertical coordinate. When using a joystick, this becomes the coordinate at which the sprite will stop, when moving upwards.

**VMY** - Range: 00 - 210

The sprite will not be plotted, unless it is lower than this vertical coordinate. When using a joystick, this becomes the coordinate at which the sprite will stop, when moving downwards.

In SLIME BLASTERS VMX and VMY were used to limit the close to the area between the horizontal bars.

**POS** - Range: free text

This is the initial horizontal position (40-200). A value higher than 200 will tell the routine to get the position from this memory location (e.g. 4000 will tell the routine to look into location 4000 for the position).

**PST** - Range: free text

This is the initial vertical position (20-200). Values higher than 200 react in the same way as POS.

**COL** - Range: free text

If this is equal to 000, then no collision detection will take place. Values should equal:

- 0, Player to Playfield Collision
- 2, Player To Player Collision (See TECHNICAL INFORMATION)

**CRS** - free text

This is the value that the routine compares the collision registers with.

For playfield collisions the value should be:

- 1 Collision with Colour 1, Loc. 708
- 2 Collision with Colour 2, Loc. 708
- 4 Collision with Colour 3, Loc. 710
- 8 Collision with Colour 4, Loc. 710

These values can be added together. For example, in the **SHOOTER** game, when collisions with the shield were detected with a value of 11, which equals collisions with 1, 2 and 8.

For player collisions the value should be:

- 1 Collision with Player 0
- 2 Collision with Player 1
- 4 Collision with Player 2
- 8 Collision with Player 3

These values can also be added together. Once a collision is detected, depending on which sprite it is, one of the four locations at 1687-1690 is cleared, stopping the sprite. Also, one of the four locations at 1768-1771 is set to 1, indicating a hit. In listing six, Location 1687 is assigned the variable C0, whilst 1768 is assigned the variable H1.

Setting STX, STY, LFX and LNY to zero will cause the sprite to be plotted and immediately disabled, turning the result into a plotting routine. This is used to plot explosion frames, where horizontal coordinates can be fixed at all locations 1768-1769 and vertical coordinates at 1770-1771. These should be assigned to PSX and PNY (see lines 6730-6736).

## THE MISSILE ROUTINE

The format for the missile command is:

CALL USR MISSILE, MISSILE, PMS\*256, MSX, MSY, MSZ,  
OFX, OFY, OFZ, CLR, CVL, LMX, LMY, PSX, PNY, IMX, ILY,  
STP, HIT

The parameters in this call are as follows:

**MISSILE** - Range: Not Valid

See test for **SPRITE**.

**PMS\*256** - Range: Not Valid

This is the PMS base page \* 256, equal to the PMS area.

**MSX** - Range: 0 - 3

This is the missile number.

**MSY** - Range: Not Valid

This should be set to 3.

**MSZ** - Not test

A speed value, in the range 1 - 32, should be multiplied by two, then if you wish, add -

+128 = Stops missile moving off the top or bottom, then respawning

+1 = The routine treats PSX & PNY as memory locations

Parameters, the higher the speed the more areas there must be in the missile image data

**FX** - Range: 0 - 255

This offset is added to the initial horizontal position

**OFY** - Range: 0 - 255

This offset is added to the initial vertical position

**IBX** - See test

A value in the range of 0-7 (See **IBX** in sprite routine explana-

tion), then if you wish, add one of these values:

- +128 = Wait for trigger 1
- +64 = Wait for trigger 2

**CLR** - Range: See test

A value of 128 disables collision detection, whilst a 0 tests for Missile to Playfield collision and a 2 tests for Missile to Player collision (See **TECHNICAL INFORMATION**)

**CVL** - Range: See test

Values tested for are identical to the CVL in the sprite routine explanation. The relevant HIT location will hold the missile number (1-4), that triggered the collision, useful for scoring (See lines 5000 - 5044)

**LXZ** - Range: 1 - 255

The length to move horizontally

**LYZ** - Range: 1 - 255

The length to move vertically

**PSX** - Range: See test

This is the initial horizontal coordinate of the missile (48-192), but if a 1 has been added to MSZ, then the value is limited to a memory location. For example, by setting it to one of the players horizontal positions (1764-1767), the missile will appear to have been fired from the player (See lines 900-945)

**PNY** - Range: See test

Identical to PSX except for vertical player locations, held in 1768-1771, and a normal position range of 32-256

**IMX** - Range: See test

This is the address of the missile image data. Depending on the missile that you are writing data for, the values are different, each of the missiles are two bits wide and possible data values are:-

MISSILE 0 - 0, 1, 2, 3

MISSILE 1 - 0, 4, 8, 12

MISSILE 2 - 0, 16, 32, 48

MISSILE 3 - 0, 64, 128, 192

**FLX** - Range: 1-32

This is the length of the image data

**STP** - Range: See test

This value is ignored when it is zero, else it is assumed to be the address of the four bytes, from which one is cleared on a collision

**HIT** - Range: See test

This value is ignored when it is zero, else it is assumed to be the address of the four bytes from which one is set to the missile number that caused the collision

If you are drawing a missile in playfield collision, then STP and HIT are ignored. When a collision with the playfield occurs, one of the four locations starting at 1632, will be set to the missile number (1-4) that caused it. After collisions, missile horizontal coordinates can be found at 1584, 1588, 1592 and 1596, whilst vertical co-ordinates can be found at 1600, 1604, 1608 and 1612, for missiles 0 to 3 respectively.

Missile collision with

Colour 1 (Loc. 708) = 1632

Colour 2 (Loc. 708) = 1633

Colour 3 (Loc. 710) = 1634

Colour 4 (Loc. 711) = 1635

All four missiles use the most recently entered STP and HIT values. In short, you cannot have different STP and HIT values for each missile.

## TECHNICAL INFORMATION

As the sprite routine stands, the collision detector works in EXCLUSIVE mode. As an example, a CYL value of 5, working in Sprite To Playfield mode, would not stop the sprite until it had hit both colours 1 (H) and 5 (L).

You may wish the routine to work in NON-EXCLUSIVE MODE which would, using the values in the above example, stop the sprite if it had hit either colour 1 (H) or colour 5 (L).

As an example of the problems encountered using EXCLUSIVE mode, if you played the INDEPENDENT game you probably noticed your ship did not always die when it collided with an alien. This was because ship-collision detection was carried out in BASIC, so using the routine would have meant that in order for the ship to die, it would have had to collide with all three aliens. Using NON-EXCLUSIVE mode would have cured this, but would have also meant that the aliens would have exploded on hitting one of the buildings, as I searched there to appear to move in front of the buildings. EXCLUSIVE mode was used.

To use the sprite routine with NON-EXCLUSIVE mode, which stops the sprite if any of the conditions tested for are true, enter this line after the routine has been placed in memory:-

```
[LINE NUMBER] POKE [ROUTINE ADDRESS]-212, 5:  
POKE [ROUTINE ADDRESS]-214, 240
```

To restore EXCLUSIVE MODE, which only stops the sprite if all conditions tested for are true, use:

```
[LINE NUMBER] POKE [ROUTINE ADDRESS]-212,  
217:POKE [ROUTINE ADDRESS]-214, 208
```

The missile routine always operates in NON-EXCLUSIVE mode.

### Locations:

```
53145 - 53251 are Missile To Playfield Registers  
53252 - 53358 are Player To Playfield Registers  
53359 - 53465 are Missile To Player Registers  
53466 - 53572 are Player To Player Registers
```

A new screen in NEXT clears all collision registers, but should not be used if the sprite and missile routines are detecting collisions.

If you are going to test the above locations from BASIC, when also using the sprite and missile routines, then remember that they can be overtable, as in the INDEPENDENT game.

There are a couple of disadvantages to using the sprite and missile routines:-

- 1 None of Page 6 (1586 - 1794) is available, except for 1444-1464
- 2 Both immediate and deferred VIDs are used.

## SOUND EFFECT ROUTINE

This routine can be used to play up to four sound effects simultaneously, is totally relocatable, runs in the central blank and is table driven. The routine utilizes the time 2 interrupt and its vector.

To call the routine:-

```
CALL-USER (MODE, NOISE, SPEED, NUMBER, TABLE)
```

**MODE** - Range: Not called

This is the address of the routine and is entered twice

**SPEED** - Range: 1 - 255

The lower the value the quicker the sound is played. All effects take the last speed entered.

**NUMBER** - Range: 0 - 3

This is the number of the effect

**TABLE** - Range: Not called

This is the address of the constant table, the structure of which is:

1st entry: This should equal 0, 1 or 2

0 and 1 are treated as a switch, 0 stops the effect, whilst 1 starts the effect from the beginning. If the effect is currently playing when a 0 is stored in the first value, it will stop after reaching the end of the table. 2 tells the routine to treat the next three values in the table as follows:-

1st value: Memory location low-byte

2nd value: Memory location high-byte

To convert a memory location into low-byte/high-byte format you can:-  
HIGH-BYTE (ADDRESS/256) LOW-BYTE (ADDRESS-HIGH\*256)

Variables cannot be used in data statements. Therefore the high/low values should be calculated prior to storing them in DATA lines.

3rd value: Effect plays when this value is found in the previously defined memory location

An example of using 2 as the first value is:-

```
[LINE No.] DATA 2, 132, 2, 5, ...
```

With its second and third entries, it references 132-132+256=444. Location 444 holds the value for trigger one, which when pressed returns a zero, hence the 4th entry.

Next comes the actual sound constant values:-

- 0 - Should be put at the end of every constant list
- 1 - Should be followed by a channel number, 0 - 3
- 2 - Should be followed by a pitch value, 0 - 255
- 3 - Should be followed by a volume/direction value:-

Volume - Range: 0-15

= Direction = 0 (Blow) the sound or 32 (Machine gun) the sound or 64 (Subsonic engine) or 128 (Vertical line sound) or 192 (Pure tone) or 256 (Alphabetic sound)

The values in brackets are only a guideline, which vary with the pitch value

4 - Should be followed by a delay value, 1 - 255

Using this information with the last example:-

```
[LINE No.] DATA 2, 132, 2, 0, 1, 0, 2, 100, 2, 770, 4, 50, 3, 148,  
3, 148, 3, 148, 0
```

Starting with entry five:-

- 1, 0 Use sound channel zero
- 3, 180 Set pitch value to one hundred
- 2, 120 Use pure tone (100), then add a volume of 50
- 4, 50 Hold the note for a count of fifty
- 3, 168 Quieten it
- 3, 154 And again
- 3, 100 Silence
- 0 Tells the routine to begin again

Once this line had been POKE'd into memory and called, the routine would wait for trigger one, then the effect would be triggered until trigger one was released. If you don't want any further sound, then you must always silence your effect at the end of the table. Remember to give each new effect, up to a maximum of four, a different sound channel, otherwise one effect will interfere with another.

Well, that's all there is, I hope you have found the post on listings useful and I look forward to seeing your efforts in NEW ALIAS USER.

# ERROR MESSAGES

**A**ll you might let owners out there will be thrilled to learn that I have written a new error code list to add on to your Atari manual. This is basically a translation of the Error Messages found in the back of your manual that you refer to when you or the computer make a mistake. These are the numbers displayed on-screen such as "Error 127," which when you look it up in "Translated Forward." This error typically occurs when the second listing: *real* is larger than the maximum second size specified in the call to *CRD*. (BASIC's maximum second size is 110 bytes.) *Real*? What? Maybe you don't really understand that, but with my new list of error messages you are going to be able to understand at least some of the computer's inscrutable messages.

### **Error 2 - Insufficient Memory**

You are disappointed to have underloaded the instructions of a computer.

### **Error 3 - Value error**

You fail to display the social principles or standards necessary to be considered a functioning member of the human race.

### **Error 4 - Too Many Variables**

No wonder you can't remember your life.

### **Error 5 - String Length Error**

The length of *factor* goes out its toe when it uses as a substitute for *your* character.

### **Error 6 - Out Of Data**

This is the situation. You're still living in the states. (Error and love, teachers and sisters.)

### **Error 12 - Line Not Found**

Just for a change, the computer is writing stupid, not you.

### **Error 80 - Device Number Error**

First you must learn how to read before numbering your device.

### **Error 120 - Misestimated Device**

It is necessary for you to remember that you are only dreaming of getting a printer in the future. It ain't there yet, Ben.

### **Error 128 - Device Time-out**

Your printer needs to interface with the earth.

### **Error 141 - Cursor Out Of Range**

If the cursor is off the screen, how the hell am I supposed to find it?

### **Error 142 - Serial Bus Data Frame Overrun**

I haven't quite figured this one out yet, but I suspect it has something to do with people lying flat NEXT to the pavement with lots of blood around.

### **Error 144 - Device Done Error**

Another one of the few which you can blame on the computer.

**You don't really understand those error messages do you? Gordon F. Hooper thinks he's got them cracked though**

### **Error 167 - File Locked**

This keeps all you busy people out.

### **Error 171 - Invalid POINT**

You can't spin many debates using these.

### **Error 189 - 80 Error**

80 errors for stupid users. This is the score of 80.00 of computer errors.

## WHAT'S ALL THAT PRINTED STUFF IN THE BOX?

It is a proven fact that when users complain of not being able to understand a program, 9 times out of 10 they have not even bothered to read the docs. You'll have to trust me on this one, but the one reason documentation is written is to explain the program. The manufacturers didn't pay someone big bucks to do all that writing for no reason.

I am one of the worst offenders in this regard. It brings back frustrating memories of assembling various items. I have the habit of not reading the instructions until I have done something which is un-doable. Why I don't read them in the first place and avoid the problems is one of life's unexplained mysteries.

It is simply an unrelated fact of computer life that computer users will not read docs until after they have run and screamed obscenities at the machine for periods of up to half an hour. After they have that out of their systems, they will sit down and look up their problems in the manuals' list of symptoms and turn to the page indicated to find out what they're doing wrong. My computer users like to think we're more intelligent than the general population so you would think we would have enough brains to learn how to do something before attempting it with no idea of how or what it's supposed to do. But then you would also think we'd be smart enough to play a game without becoming addicted to it, and we've all played games and the few hours of the morning at one time or another. Haven't we?

Speaking of lack of grey matter, why is it that I take a major disaster such as having typed for 8 hours straight and forgetting to write it to disk or make a back-up before the raw user remembers that the number one rule for computing is ALWAYS MAKE A BACK-UP. Remember this the next time you wish to back your computer down the toilet.

# PICK A CARD

## YOUR CARD IS ...?

The MAU (Mailbox) column received the following letter from Nigel Ludlow of Berkshire, Bath:

"I use Atari's Home Filing Manager quite a lot. I find it handy for addresses, etc. Today, when I looked it, I imagine it partially crashed, as I found some of the information missing on most 'cards'. For instance, the name and first line of the address have 'disappeared' and the rest of the address has moved up into its place. When this happened, it also seemed to create a number of blank cards, something that is supposed to be impossible.

I wasn't that worried as I thought I could examine the disk sector by sector and retrieve the information manually, using the 'Disk Editor' (Page 4 PD Library disk 5). However, it seems Atari, in their infinite wisdom, have built in enough protection, even on a DATA disk, that I am unable to get around.

Does anyone have any ideas as to how I can circumvent this and get at my data?"

I was surprised at Nigel's comment about 'protection', so I decided to investigate further in order to provide an answer to the Mailbox column. It soon became apparent that the answer was going to be a long one which would take up a whole column, so my reply to Nigel has become this article.

## TAKE A CARD, ANY CARD

I located my copy of Page 6's PD 'Disk Editor' and proceeded to examine the Home Filing Manager (HFM) manual that is held on a HFM data file on the reverse side of the HFM disk that was supplied with 1050 packages. The results of my investigations revealed that HFM data disks do not use the standard Atari DOS-disk format with the directory starting in sector 281 and each 128-byte data sector having 125 bytes of data with linkage information in the last 3 bytes. Instead, on a HFM data disk, sector 348 contains an index to the cards within the file. Using the 'Disk Editor' utility, the hexadecimal display of sector 348 for the HFM manual begins as follows:

```

byte
---
000 28 08 04 80 03 08 04 08
008 10 08 14 00 1A 00 20 08
016 20 08 2C 00 32 00 3F 00
etc.
```

## A PAIR TO OPEN

Each pair of bytes holds a value in Least Significant Byte/ Most Significant Byte (LSB/MSB) format. Each single byte can hold a value up to 255, so to hold values greater than 255, the number is broken down into two parts: MSB (the number

Allan J. Palmer explains how to solve some problems if your Home Filing Manager cards are playing up

divided by 256 and rounded down to the nearest whole number) and LSB (the original number minus the 256s - multiply the MSB by 256 and add the LSB to get the value). The Atari stores the LSB first in a pair followed by the MSB.

So, in sector 348, the first two bytes hold the number of 'cards' in the file, in this case 80000 (hexadecimal) which equals decimal 41. Each of the next 41 pairs of bytes holds the start sector of each card on its first appearance. Thus, the first 'card' starts in sector 80004 (4) (if we ignore the '0' in byte 4 for the moment - I'll get back to it later), the second card starts in sector 80008 (12), the third 'card' starts in sector 8000A (10), and so on.

Next, going to sector 4 (the start of our first 'card' in this file, the 'Disk Editor' hexadecimal display ends with the following line:

```

byte
---
100 04 00 00 00 00 00 00
```

Here, we find that bytes 120 & 121 hold the value of 80004 (4) - the start sector of this 'card', and bytes 122 & 123 hold 80008 (8) - the next sector of this 'card's' data. Moving onto sector 8, we find that it's 'Disk Editor' display ends with:

```

byte
---
100 04 00 00 00 00 00 00
```

showing that the next data sector for this card is 80008 (8). We can follow this chain on through sectors 7, 8 and 9 in sequence to where we find sector 9 ends with:

```

byte
---
100 04 00 00 00 00 00 00
```

Thus these bytes 122 & 123 contain 80000 (0) signifying the end of this 'card'.



## WHAT'S IN THE CARDS?

First, we can now find where each 'card' is stored. Interpreting the data is slightly more tricky - and this may be where Nigel thought the data was 'protected'. Lower case characters are easily recognised in the 'Disk Editor' display, but upper case and special characters aren't. The reason for this I realised, after consulting TERRY'SOFT'S 'Third Book of Atari', is that the 'card' data is not stored using ATASCII characters (which are readily decipherable in the 'Disk Editor' display), but rather using the KOOLIE (Internal Code) values for each character. This value is the number that must be FORCED into ASCII memory to display the character on the screen; the number also represents the order of the character within character set memory.

## MARKED CARDS

I read that I'd explain why in sector 249 the actual value field for the start sector of the first data 'card' is 80004, and just 80004. This writing of the top-most bit in the memory which indicates that a 'card' is 'marked', which results in the paper clip being displayed on screen when the particular 'card' is retrieved.

Hopefully, the above should help Nigel to retrieve his data - it sounds as though the sector tracks and/or linkage has got screwed up somewhere, resulting in the start sector of each 'card' being offset from the true start position.

## REVERSED CARDS

After carrying out the above investigation, I found a program in the June 1988 issue of 'Atari User' (Vol. 4, No. 2) by Gordon Sinclair which converts HFM files to standard Atari 5.25K text files which can be read by a word processing program. Gordon did not describe the HFM file format, as the text accompanying the article, but by working my way through the BASIC statements, I found the results of my studies described above were confirmed. Additionally, Gordon's program reveals that bytes 104 to 122 of sector 249 on a HFM data disk contain the file ID#. He checks for the presence of a HFM data disk by reading bytes 42 to 45 of sector 247 - a HFM disk should have the hex values 00 00 0F hex. If the HFM file contains more than 40 cards, the index in sector 248 continues into sector 249. Within a card data sector, 30 character bytes of text are held in bytes 2 to 30, 32 to 78, and 82 to 129 (after reserving slots from 6 on per the 'Disk Editor' display).

## MORE TRICKS

In looking through other references, I found that Derrick Cohen (a long time Atari Classic writer) produced a utility that allows you to print only a certain number of lines from HFM 'cards', set the number of blank spaces between cards, and set printer control codes - this utility appeared in issue 13 of 8/87 of the magazine produced by the Deansworth and Poole Atari User Group (DUAUG).

If there anyone who can provide us with any more details on HFM? Are there any utilities wanting to be published which give an additional facilities for this useful Atari product?

## NORTH OF SCOTLAND ATARI USER GROUP

PRESENTS

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THE PAGE 6

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# Some Basic Notes on ... GRAPHICS

*Ann O'Driscoll introduces you to the various graphics modes so you can begin to write your own programs*

## MENU SCREENS IN GRAPHICS 1 AND 2

Graphics modes 1 and 2 use five colour registers, numbered 0 to 4 (memory locations 700 to 71E) and they can store the full 64 character set - i.e. 64 characters - at a time. Each of the 64 available characters can be printed in any of 4 colours, with the 5th register (register no. 4, location 71E) being used for the background colour. The different colour registers can be accessed by the way the string is printed on the screen - capitals for register 0, inverse capitals for register 1, etc. You can also use `CHRS` and `COLOR` to select a character and register. These take the form `PRINT (CHR$(N))` or `COLOR N` followed by a `PRINT` command where 'N' is the ASCII number.

The relationship between colour registers, print type and ASCII numbers is shown in Table 1.

To change a colour in a register from its default value, just use the command `RECOLOR = C,L` where 'C' is the register number (0-4), 'L' is the colour you want (0-255) and 'L' is the

function you want (0-14). Alternatively, you can `FORCE` the shadow memory location for the register with `(HP) = L` where 'L' and 'L' are colour and function values as before and 'L' is a constant.

## THE PROGRAM

The listing shows a selection of menu screens which show the different ways colours can be used and characters printed in Graphics 1 and 2. All the screens use the `SELECT` and `SELECT` control keys to move between and pick menu options.

**Menu One:** The menu options, which are held in `DATA` statements, are read and printed on the screen at rows 5, 8, 11 and 14 (LINE 1000). The `CHAR$(L)` in `LINE 1020` produces an asterisk using the lower case register 1 (location 708). This sets up the screen display.

You press `SELECT` to move the asterisk. The variable `IN` holds the current row number of the asterisk and it holds its previous position. `LINE 1080` blanks out the old asterisk by printing a space before printing the new one at the updated location.

**Menu Two:** The menu option names are printed out on rows 2, 4, 5 and 6 (LINE 1050). The variable `R` defines the row number for the 'current' or highlighted name. This is printed in a different colour to the other names and is updated when you press `SELECT`. `LINE 2070` sends the program off on a different (one line) sub-routine depending on the value of `R`. This prints the 'current' name in lower case (register 1; location 708) and puts the previously highlighted name back into capitals (register 0; location 700).

The `"COLUMN 30"` in `LINE 2080` identifies a 'Y' sign using register 0 (location 700). This is printed around the screen using the `PRINT` and `REPEAT` commands.

**Menu Three:** Normally the 64 characters accessible in Graphics 1 and 2 cover the first two pages of the ROM character set. These comprise ASCII numbers 32 to 95, which means you don't get control characters or lower case letters. You can access the second half of the character set by using `FORCE` (70E,20E) - this directs the computer to page 20E to ROM for its characters. Menu Three does this (LINE 3000).

TABLE 1: CHARACTER COLOUR REGISTERS IN GRAPHICS 1 AND 2

REGISTER No. AND LOCATION	ASCII No.	PRINT TYPE
0 (700)	32-95	Capitals
1 (708)	96-127	Lower case
1 (708)	96-127	Lower case
2 (710)	160-223	Inverse caps
3 (711)	128-193	Inverse lower case
3 (711)	224-255	case



# FANCY A ROUND?

**A round at the local golf club costs a packet so Patrice Robert tries out the game on his XL/XE instead**

**T**his time I decided to have a look at all the golf games available for the Atari 8-bit series. This idea took me after several trials in this sport. I mean the real sport! Playing golf in France is much more expensive than in England, however and I wondered if I could recover the same feeling on my screen as I felt on the grass. Well, I haven't been disappointed. For this review, I have separated miniature golf games from the "big" golf games. Although both are fun, it's rather easier to compare them by category.

## THE EARLY DAYS

My first try at this sport was via **HAYDEN GOLF** produced by Hayden Hawk in 1983. The game includes on-screen instructions where the computer asks a few questions and then chooses the first hole. When playing the game each hole has a top view and a side view at the same time on the screen. In the top-view, you will be able to see the tee and flag. Information for driving and putting is given in a status line: their number, distance from hole, par, number of strokes.

The computer then asks you the club you want to use. Answer by typing a number followed by W for wood, or I for iron. The pitching wedge and the sand wedge being available by typing respectively 00 and 11. Next the strength 01 to 03 and the direction (by a value number between 0 and 500) can be selected. On the green, as with most golf games, only strength and direction are asked. A help chart is also given by typing the letter C from the prompt, indicating you the current score and displaying a list of woods and irons and their corresponding average distances.

The playfield displayed from the top view offers a view without any trees. On the green, the playfield displayed is bigger offering a much better view of your situation. I finally discovered to playing this game that up to 4 players can play and

select their handicap. In some retailer's catalogue you will see this game called **CHAMPIONSHIP GOLF**. Remember it's a keyboard-driven game! As to my verdict, I would say that it's not the best golf game but there it was produced in 1983!

## IT'S A FUNNY OLD GAME

First, I played **GOLF CHALLENGE** which is, in my opinion, one of the funniest golf games reviewed here. Why? Because the playfield is very simple although well designed. This one offers a top view including trees, water, greens and your player who has the same appearance as the tennis player from the Atari cartridge! You manipulate the player and make him walk near the ball and then make the club go round until it hits the ball. On the green, which increases in size when you enter 8, the action is the same. It is the player's movement and the way he hits the ball that makes this relatively joystick-driven game quite funny.

## GETTING BETTER

The following two versions of golf on XL/XE are of higher quality than the previous ones.

I must prefer **MAXI GOLF** produced one year later in 1984 by Adventure International. The game comes in four disks and is of top quality with great graphics and the real feeling of playing golf. This version is more sophisticated than the previous one because of the display screen offering a view of all the layout, including trees, bunkers, sand traps, rivers, water plants, and even your player's feet. You can feel the difference by just watching the presentation screen with circular clues supported by introductory music. The main characteristics of this game are the display of the golfer's progress in a chart and overall the nice top view of the playfield with several obstacles. This display of the game makes it quite attractive. The bottom of the screen offers data on clubs, strokes, wind, strength, length, number of shots, curve and direction. Another good point for this game is that it is joystick driven.

You can follow the flight of your ball after your shot hoping that it doesn't hit a tree or fall in the water. This game is also differentiated from the others by the inclusion of a course designer giving you the possibility to build your own layout.

## THE MASTER GAME!

Now for the grand master: **LEADER BOARD** produced by Access in 1986. This stunning version of golf really made me speechless the first time I saw it as I discovered a 3D

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Issue 32	Issue 44	Issue 54
Issue 34	Issue 45	Issue 55
Issue 36	Issue 46	Issue 56
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playfield and outstanding player animation. Graphically un-  
equalled in the XL world of golf games, the 3-bit version gives  
the same feeling as the ST version. This game makes me think  
of the Interactive CD machines, recently introduced by Philips,  
which has a golf game quite similar to LEADER BOARD.

The only thing I would have liked to see on the XL adaptation  
is the top view, which has been included in many other  
adaptations of this game, as well as trees which don't appear  
in our machine's version. In top options, this game is the most  
complete golf game for the XL/XE as you can play up to 4  
players with different levels (novice, amateur, professional) and  
select 18, 36, 54 or 72 holes (you must have a lot of spare time  
ahead for this one). On the information side, the game gives you  
everything you need: hole number, put number, course  
number, strength (graphically displayed), distance from hole,  
possibility of shot, wind direction etc.

With the addition of **LEADER BOARD TOURNA-  
MENT** additional courses are available but the playfield will  
lose its trees and its less water (the initial version could make  
you think you are playing on islands).

There are some details in the Leader Board's series that really  
give life to the game. The player's animation, of course, but  
also the effect of the wind directly shown and applied on your  
ball after your shot. There is also the small island displayed  
under your player's ball if your ball has fallen in a corner of the  
green as well as the noise of your ball hitting the flag. If you're  
an 8-bit addict as I am, you can't miss playing this game with  
friends and good deal of spare time.

## ALMOST THE LAST

The last commercial XL golf game is **PRO GOLF** produced  
by Atlantic software which dates from 1986. This version offers  
the greatest amount of options that can be defined. With a top  
view of the playfield, the game lets you choose if you want a  
championship or a practice run, a single round and medal or  
relationship trees. Then, you decide whether you want random  
or user defined ground (dry, wet ...), variable or constant  
wind as well as its speed and direction. Finally, you select your  
club, direction and force of shot by pushing the two letters D  
and F on your keyboard. If the top view is not so well designed  
as in *Real Golf*, the fun of it is that the computer displays  
comments after your shot: "in light rough ... good hit" - for  
example. On the green, the display expands and the hole is  
shown with complementary data showing the slope.

## A BONUS

**PROFESSIONAL GOLF**, the disk bonus of New Atari  
User Issue 38, offers an original concept. Not only can you play  
up to four players, among trees and bunkers, displayed on a  
top view, but you are faced with a wide range of top profession-  
al golf players all over the world. Consequently, the scoreboard  
displays your position among the 38 other players (as in USA  
Cross Country Hand Race). A built in constructors set option is  
also included for those of you who want to create their own  
fairways.

## GOLF AT THE SEASIDE

In the fun world of miniature golf comes **MINIATURE  
GOLF PLUS** produced by Klent software in 1985 and pub-  
lished on the Artic disk of January/July 1990 (Vol. 9, No.2). This  
game offers a close up view of the whole of the playfield, as it is  
smaller than in the real game. You have to see and include the  
barriers in your strategy as in a billiards game. Your ball has  
to be well aimed and with the correct strength as your ball  
could come back to your previous situation. Direction and  
angles have to be seriously considered to meet the goal. Original  
challenges are offered with different obstacles during play  
such as moving walls in the middle of the playfield. If you don't  
want to play the set holes any more, you can build your own  
with the construction set option included.

## FOR THE PROS?

I don't know if Nicklaus or Faloutsos played this game  
before carrying thousands of dollars (I really don't think so,  
but there is, in these XL games, a version for each of you,  
**LEADER BOARD** for the best player that doesn't want to get  
more involved in the game and wants fun from the start, **PRO  
GOLF** for the more involved player that wants to see a large  
playfield from the top view, **PROFESSIONAL GOLF** for building  
your own playfield, and **MINIATURE GOLF** for the billiards  
player that wants to study the angles and direction in a  
smaller display.

I hope to see you soon on the greens!

# MULTICOLOURED TEXT

As we all know very well, the Atari XL/XE defaults to light blue text on a darker blue background in Mode 0. Many Atari users would like an easy way to get different coloured text colours that lets their own programs and indeed their 'was a letter in issue 46 of New Atari User' asked for a program to explain how to do this. Although the words 'strictly not possible' and 'clever programming' were mentioned, it is actually very simple to achieve, although of course there are a few limitations:

## TWO COLOUR LIMIT?

Firstly, Mode 0 only allows two shades of colour to be used: locations 740 holds the value for the background colour and 750 the text foreground. The resolution of the screen in this mode is 528x192. To achieve multicoloured text, we must first use a mode which uses a lower screen resolution, and consequently, slightly chunkier graphics. Fortunately, 100x192 is adequate for this purpose and is used to many games instead of the normal mode 0 text. However, whereas normal characters are defined on an 8x8 pixel grid, these characters are limited to 4x8. One pixel must be used to indicate columns and row between the characters (otherwise the letters would run into each other), so only 2x7 pixels are actually available for character data. This poses a few problems for certain wide letters of the alphabet such as the 'w' or 'm', but with a well designed font, they can be made to look pretty acceptable. Some characters are even more difficult to achieve, such as the 'B' or 'H', but we can't help our code and so if! Another problem is that each font holds 128 characters, so only three full sets of 26 letters can be incorporated, (although creative minds use an extra colour register!) and even if the character set was larger, the Atari XL/XE only has five colour registers and one of those is for the background, so the limit is four different colours of text per screen!

## CREATING A FONT

Program 1 contains a data set for a multicoloured font and a save routine to put the font onto disk (or tape) very quickly. This file is a modified version of the Atari character set which gives you four different colours for your font plus all the other normal characters (punctuation, numbers, etc.) except the Control characters (backspace, graphics). The control characters' data has been replaced with another alphabet (to have the lower case letters). Once you have typed in the program text and saved it (type) run it and the new font will be written to disk as a 0-sector file. To save the font to cassette, simply change the 'D' to a 'C' in both programs.

The second program is used to load the created font and displays a message in four colours: yellow (normal text), red

**Robert Stuart provides a routine to get away from those boring Graphics 0 displays**

Every one text, blue (control characters) and green (inverse control characters). The normal Mode 0 display list is altered to that of a four colour mode for this program without the need to roll up Mode 12 or 13. Possible uses for this font include coloured text for adventure games, Bakker (info) screens, more attractive status lines for arcade games, and countless other uses for which monochrome text is unsuitable. The four colours used in the above program can of course be changed to whatever you wish. Note locations 740 and 750 if you want ordinary white text, black in a black background for your multicoloured text and you'll have less problems, as the main characters (lower letters, numbers, punctuation, etc.) have been specially assembled and the greater clarity on a black screen. It means that four colours are needed, then a display list interrupt must be used, which would give up to four different colours on every screen line, but that is another story and another article!

```

00 1 2000 00000000000000000000000000
00 2 2000 00000000000000000000000000
00 3 2000 00000000000000000000000000
00 4 2000
00 5 2000 00,4,6,7,000,0000,0000
00 6 2000 000,0,0000 000,0,0000 000,000
00 7 2000 000,0,0000 000,4
00 8 200000000000000000000000000000
00 9 2000 0000,00000,00000 000000 000000
00 10 2000 0,00000 0,0000 000,000
00 11 2000 000,000,000 000,04,0000 000,0
00 12 2000 010,000
00 13 2000 0,010
00 14 2000 0,010 = 0000 00 000 0100
COLOR1
00 15 2000 0,010 = 0000 00 000 0000
COLOR2
00 16 2000 0,010 = 0000 00 000 0100
COLOR3
00 17 2000 0,010 = 00000000000000
COLOR4
    
```

Program 2 - a font loader



# MEGA MAGAZINE

reviewed by Paul Rixon

**T**he floppy disk has become a popular medium for exchanging news, reviews and topical information among specialist computer users. The expense of printing magazines on paper has proved a major incentive for small-scale publishers to search for other means of communication. Disk mags can also act as a point of distribution for the latest public-domain software and are therefore readily accepted by users. I recently received the first four issues of a publication designed exclusively for the benefit of Atari owners. You may have heard the name MEGA MAGAZINE, a disk mag created by Freddy Ollings (aka Frankenstein of 'Big Demos' fame) and distributed by A.N.G. software of Holland. You may not have heard that Micro Discworld are now handling UK sales, thereby removing the hassle and additional expense of overseas payment.

It's safe to say that Mega Magazine is unlike other disk mags you may have encountered. In common with most, each issue is supplied on a double-sided floppy and follows a fairly consistent format - side one contains a wide variety of textual material whilst side two is reserved for program files. However, the text part isn't as dull as you might expect. The disk boots up with an impressive menu system accompanied by excellent music. The articles tend separately from disk and, due to the compression techniques employed, there is a LOT to read! The text screen is extremely user-friendly and lets you scroll back and forth at different speeds, using joystick/controls. You can choose almost all the options with a joystick - the only exceptions are console key presses to silence the background music or toggle output to a printer.

Regular features established in the launch issue include hints and tips for popular games, programming tutorials, demo reviews, a substantial Lynx section, a mailing and a column especially for heavy metal heads. There are twenty-seven text items in issue one with subjects ranging from 3D vector graphics to the story of the High Tech Team and what happened to their Platinum demo. The tip side is packed full with challenging screen files designed for use with the Boulderdash Construction Set.

**A**mong many articles in issue two there's a list of illegal newsletter episodes, a review of the Black Magic Compiler and full details of an Atari 8-bit stress upgrade. The Lynx section offers news, reviews and tips on established titles. Side B-centrals, by popular demand, no more! Double-discs abound! Instead there are three excellent demos from Turkey, Norway and Poland with the usual mixture of scrolls, music and special graphic effects (see the Black Lamp demo), as well as a shareware archive with full instructions so you can access several other compressed files on the disk. Some of these relate to the articles (for example, programs to use with the stress upgrade) while others provide source code, utilities and pictures.

Issue three investigates fractal graphics, hardware enhancements, compression techniques, CDS products and much more. The fractals article is accompanied by a demo of the mandelbrot set and utilities to help you explore and create your own fractal drawings. Elsewhere there's a demo of a



Flashy game called Tanks - it looks impressive! - and another conventional demo from Turkey. There's more information on stress enhancements and a source code listing from part of the Atari Expo II demo, so you can find out how they do it!

**T**he fourth issue takes a look at games from A.N.G. and Zepplin Games, demos from various sources and Woodfin's Disassembler. It also investigates floppy file interrupts, floppy faces and philosophical musings. As well as two lively demos the program section contains an innovative music player from Poland that uses sound-tracker 'BIO' files converted from the ST and Amiga. It's accompanied by three example modules. There's a program to unarchive LZW files, one to check that your RAM boards are in working order and another that's handy for those who use a DFS to download disks as single files - it converts files to-disks and vice versa. I could fill up the rest of the magazine describing the content but you will already realize that Mega Magazine is packed to the last byte with information, reviews, programs, demos and almost anything to do with the world of Atari 8-bits. There is a bias towards programming topics and issues of a technical nature though the authors are aware of the need to cater for 'average' users. If you're exclusively interested in games you'll probably find it disappointing.

Unfortunately I can't end by drawing your attention to the warning which appears at the introduction of every issue. Mega Magazine contains some language that would not be considered suitable for children. Given that many Atari-owning children will find the remaining articles of great interest, and that many adults would prefer the offending material to be removed, it's a mystery to me why the Editor doesn't make an effort to clean up the magazine's content. Apart from this one drawback, Mega Magazine is truly amazing!

MEGA MAGAZINE is published by A.N.G. software, Polderhoekse wijkweg 68, 3114 PC, Rotterdam, Netherlands and distributed in the UK by Micro Discworld, 288 Chertsey Road, Stevenage, West Midlands, EN4 5BA. Telephone 0311 363 0330. The price is £2 each for issues 1-4 or £10 for the set.



# ADAX

**A**nother new game? This one, called ADAX, is an arcade adventure from Avalon in Poland and has been imported to the UK by Micro Discount, who specialise in offering formerly undiscovered products. Although the program contains a few Polish screen prompts this is not a problem as the meaning is generally obvious and an English translation of the playing instructions is supplied.

It would seem that Avalon has avoided the usual planet of Adax and the Space Belugas have commissioned their main dependable

for its (and dependable?) employee - that's you - to travel & gain the situation. It doesn't take you long to discover that the masses have reconstructed a military base and are planning to launch a massive attack on Earth itself. Needless to say, your own mission is to wipe out the HQ and see the masses out of town!

The game kicks off, rather worryingly, in a style similar to Green Beret and similar shoot 'em ups. There are dozens of guards for your man to avoid and your platform jumping skills are rigorously tested. Fortunately, it soon becomes apparent that there's more to Adax than simply blasting the bad guys. In line with all arcade adventures there are various objects you will have to find and utilize in order to successfully complete your mission. When you enter a likely-looking base of



profiles you can inspect the contents before deciding whether to keep or discard them. If you wish, you can equip a new item for one you already have. Missiles are obviously useful for dealing with the opposition's defenses, but you'll also need items to access different sections of the base. Ultimately you're expected to locate six floppy disks that contain the enemy's strategic plans. Perhaps, what happens - ? and plant a bomb in the power station for the grand, booming, blast!

A great deal of effort has been

invested in the visual design of Adax - there's no shortage of colour, detail and imagination. The game also benefits from good animation and clever features such as lifts and a high-speed transporter. The background music isn't bad though a slight mode can be chosen if preferred.

Well, I'm impressed Adax is an all-round high quality production with enough action and intrigue to ensure your man's last mission is a busy. If arcade adventures are up your street, this is one you won't want to miss.

**Title:** ADAX  
**Publisher:** Avalon/Micro Discount  
**Price:** £1.95  
**Format:** Disk

**Reviewed by Paul Moon**



**O**riginally launched as separate budget-priced disk games, Boing II and Speedfox can now be obtained from First Class Tiger Developments in the form of a single compilation.

The first version of Boing, which was launched with one of the Excel disk magazines for NAL issue 88, ran along similar lines to Hazard - a popular jumping game on various micros and known to starters in the game of Green Beret. Boing II is based on a similar principle but also includes a shoot 'em

up element. The game is a horizontal scroller and your joystick controls a small powerful ball as it travels on a lengthy journey over hazardous territory. You must take care not to fall through gaps into the sea or collide with alien invaders, since either event will result in the loss of life. You can shoot at the attacking masses for temporary respite though ammunition is limited. Luckily there are bonus squares providing such useful effects as additional ammo, smart bombs and limited missile protection,

The graphics and sound effects are adequate. Boing II is a simple but addictive game, and it's worth persevering to experiment the later levels for you can see cheat mode instead.

A highly advanced parallel universe in the setting for Speed Fox, yet another game that has been justified by the need to save inveterate citizens from an imminent alien attack. In contrast with the imaginary universe, the screen design is actually rather basic - each level is presented as a single screen. Your objective is to zip around the playfield collecting enemy cells (they belong to a genetically engineered creature, apparently) whilst avoiding the menacing cross-fire from two alien spacecrafts positioned either side. A time limit adds to the challenge and there are bonus pills on offer to give you spe-

cial powers such as jumps and temporary shields. Due to the rapid speed of action and the fact that your ship is limited to vertical and horizontal movement, Speed Fox is not an easy game to control with. It may not be long before, like me, you decide to re-learn and try another round of Boing II instead!

Boing II is a reasonably entertaining game though Speed Fox is unlikely to hold your attention for long. Cassette users presently miss out but Tiger Developments have tried to make up for this with a compilation tape of their recent releases.

**Title:** BOING II & SPEEDFOX  
**Publisher:** Tiger Developments  
**Price:** £4.95  
**Format:** Disk

**Reviewed by Paul Moon**

## BOING II & SPEEDFOX

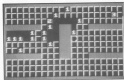
# BOMB

**T**his straightforward puzzle should be familiar to PC users since a very similar game known as Minesweeper is bundled as standard with copies of the multi-tasking-desktop environment Microsoft Windows 3.1. It must be one of the most frequently played games at the expense of commercial organisations!

The player of BOMB is faced with a large grid of rather dull squares and a joystick operated cursor. The object of the exercise is to clear the grid of dangerous mines which have been concealed under some of the squares. By placing the

cursor on a square and pressing either the space bar or joystick trigger you must decide whether the underlying territory should be designated as mined or safe area (respectively). To help you in this seemingly foolhardy task the safe areas, once revealed, are labelled with numbers representing the quantity of mines in the immediately surrounding squares. Once you've successfully cleared a small portion of the grid you can apply certain rules of logic to replace the element of guesswork that would otherwise be required. For example, if you know a mine with an adjacent safe square labelled '1', there can be no more mines surrounding the latter.

You've got to move quickly since your time allowance is limited. It doesn't pay to take chances - if you fail to correctly identify the nature of a square the game is abruptly



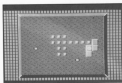
ended. At first the task seems almost impossible but addition sets in as you gradually improve your playing technique. You can move up through a total of twenty levels, the later stages offering differently shaped grids constructed from a greater quantity of squares. Eventually it becomes more a case of luck than judgement. Graphics are no more than functional like all too frequently experimental game user interfaces, particularly under pressure within a reasonable-time accompanied gameplay. Unfortunately my copy of

BOMB contained a small bug that came to light upon the completion of a dozen games. The program froze at the start of the thirteenth round and refused to accept inputs - KeSoft have assured me this will be fixed in the release version.

BOMB is not one of KeSoft's most prestigious efforts but it's an addictive puzzle, none the less.

At present it's only available direct from Germany so you'll need to check the exchange rates before ordering. Drop KeSoft a line and they'll send you the latest price list.

**Title:** BOMB  
**Publisher:** Ke-Soft  
**Price:** DM14.95  
**Format:** Disk  
**Reviewed by:** Paul Dixon



# PLAYER'S DREAM III

**K**e-Soft have now released three disks in their Player's Dream series of compilations. The first instalment (see NAM issue 58) is presently the only one available with English instructions, though Ke-Soft are well able to provide a translation if there's sufficient demand.

PLAYER'S DREAM III comprises three games though at present only two will interest the majority of British players - the third is a German only text/graphics adventure. Fortunately the other two programmes, Jump and Overview,

contain English messages. Jump is a revamped version of a very old arcade game that's intended to stretch your power of eye-to-hand co-ordination. The joystick runs inside a ball which is perched on a platform constructed from four small squares. Every few seconds a tile at the end of the platform dissolves and subsequently reappears somewhere around the front, giving the effect of movement in a maze-like fashion. To avoid losing the ball you've got to ensure it keeps rolling to the front of the platform. On the

first few screens this is relatively simple but when the game speeds up your reactions are severely tested! There are several opportunities to obtain bonus points though on higher levels there are others altogether but the score will probably be the least of your worries! Jump features simple graphics and sound, but the game is surprisingly addictive.

Overview is a rather unusual two-player strategy game that combines a hint of Diplomacy with a fairground scenario! The players take turns to place coloured balloons on a large grid and aim to end up with the highest number of their individual colour. If desired, a player can choose to inflate one of the existing balloons. After several 'blows' the balloons explode and squares near balloons in the four adjacent positions, those may already be occupied by oppo-

ing balloons, which are thereby transferred to the control player, or similar balloons which are then inflated in the same way as before. With careful planning it's possible to set off a chain reaction and radically change the grid's complexion in a single move! Overview is neat, smooth control to play does it is to explain. Treat two player games are few and far between but this one is a fine example.

Despite the inclusion of a German adventure Player's Dream III is well worth investigation. Overview is a nice game for two players while Jump provides a useful bonus.

**Title:** PLAYER'S DREAM III  
**Publisher:** Ke-Soft  
**Price:** DM14.95  
**Format:** Disk  
**Reviewed by:** Paul Dixon

# LIZARD

**T**iger Developments' latest production is a horizontally scrolling shoot 'em up with a host of added complications. The game is a combined effort by Ted Ottaway - the man responsible for Yukon and Mission Xpress - and Hubert Stuart of Boardwalk King fame, who also knows a thing or two when it comes to designing computer graphics.

Chances are you may not have heard that members of the reptilian species have formed an alliance and are all geared up to invade the Earth in order to set up leveling red wine. Now that you have,

you'll surely want to play your part in defending mankind!

Your joystick manoeuvres a jet-powered character who is just unlike the one in Mission Xpress - for some reason I find his manner rather concerning; the way you scroll in either horizontal direction through the alien world which is defined by a stunning assortment of colourful backdrops. Hubert Stuart has really gone to town in providing an array colours, objects, patterns and features as you could possibly hope to encounter. There are chains of obstructions to navigate through it's sometimes difficult to know where they are until you hit them! The continuous waves of space-lander style enemies are rather more conspicuous, but are few in number. The best policy may be to keep your finger firmly on the fire button and hope for the best!

Despite its initial appearance

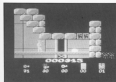


Lizard is by no means a straightforward blasting experience. Whenever you get an opportunity you should look out for solar panels that must be destroyed to disable the enemy force fields. You should also investigate objects that may contain bonus points, power, bombs or a gun. Your current weapons, including space-ber operated smart bombs, are shown on a status console below the scrolling window. As if you didn't have enough problems you've got to collect up letters and arrange them in a colour-coded group.

The letters form a password that will enable you to log onto a computer terminal, in order to obtain a mega-gun that you'll need to tackle the Grand Boss on each planet in Lizard, maybe? Phew! After the first, there are far further levels to complete.

Lizard is a very challenging game and, apart from the grime I have about the ungratifying appearance of the central character, is a graphical success. Tiger Developments' software improves with every release - this is their best yet!

**Title:** LIZARD  
**Publisher:** Tiger Developments  
**Price:** \$4.99  
**Format:** Disk  
**Reviewed by:** Paul Dixon



**D**espite its ill reputation in the UK, seems to have been re-evaluated recently by its usage of activity overruns. In particular, Poland has unexpectedly emerged as a valuable source of high quality software. A fine example is HANS KLOSS - an arcade adventure from Avalon of Poland imported to this country by Micro Discworld. It's similar in nature to readers' Action which is also reviewed in this issue. The program (not in Polish but translations are listed as part of an English instruction

booklet. The plot unfolds during the height of World War II. Hitler has instructed his scientists to develop a new, powerful missile that will thwart any plans the allies may have of putting a stop to his reign of terror. Fortunately, allied intelligence have located the underground location where the missile is to be built and launched. They have now decided to urgently dispatch their most experienced and successful secret agent, also Hans Kloss, to infiltrate the complex and destroy all re-

# HANS KLOSS

levant documentation.

Your part in all this is to help Hans Kloss obtain nine pictures and twelve other documents, all of which are positioned deep in enemy territory. You will need to look out for keys, since there are many locked doors in your path. You'll also need regular supplies of food and drink to replenish your steadily depleting reserves. There are numerous lifts to help you get around but also some nasty traps to catch you out! Complex maze routes aren't too difficult to overcome but trip-switch operated super fire is a real killer!

The main playing window occupies about two thirds of the total screen area, the remainder being used to indicate your score, health and number of items collected. The pleasantly detailed screen flip as you walk or jump through screen boundaries. Animations

of the central character, who is rather gross to say the least, is good quality stuff. The life scroll smoothly and the joystick controls feel responsive and comfortable. A good sound track accompanies the action - the more I preferred not to hear it all!

Without doubt, Hans Kloss is one of the best arcade adventures to hit the Atari world for ages. I blame it entirely for missing the copy deadline this issue! If there is sufficient interest in this game and other recent imports, there are bound to be more in the future. Isn't it time you gave yourself a treat?

**Title:** HANS KLOSS  
**Supplier:** Avalon/Micro Discworld  
**Price:** \$4.95  
**Format:** Disk  
**Reviewed by:** Paul Dixon

# TUTORIAL TIME

## QUIZ TIME

**T**he initial concept for this article came from an enquiry by Paul Robinson. He has written a quiz program for young children and wanted to make it more challenging by setting time limits on the answers. Initially I was just going to send a quick reply talking about the built-in timers in the most operating systems, but then I thought a bit further, and realized that the problem was not so very easy. A straight-forward timer is not difficult to implement, but a timer which will display continuously on screen while something else useful is being done by the computer is rather more difficult to do. So I thought I had better give you a concept by incorporating it in a little general knowledge quiz of my own. It works, as you will see if you type in the listing.

### THE BUILT IN TIMERS

The fundamental principle of the listing is to use memory locations 18, 19 and 20. Together these three can make quite a useful clock, with accuracy that is good enough for most school and amateur time requirements, though they are probably not accurate enough for a clock that runs day in and day out. Location 20 is the first part of the timer, it counts up in jiffies—that is fifths of a second in the UK and sixths of a second in the USA. The difference must have something to do with electric mains frequencies and the related rates of television sets (also 50 in here and 60 here in the United States). This counter runs up from zero in 255 and then resets to zero as location 19 increments by one. Similarly location 18 increments every time memory location 19 gets to 255 and resets to its zero to 1.

You can work out that location 20 counts from zero to 255/50=5.12 seconds and then resets so location 19 counts in intervals of 5.12 seconds to 5.12\*256=1310.72 secs or 21 minutes and 50.72 secs. Location 18 only increments every 21 minutes and 50.72 seconds, so it does not reset until 83 hours 12 minutes and 24.32 seconds have elapsed. This should be quite enough for any Atari application, so I will not try to work out a routine that takes account of the clocks all resetting to zero at that time.

This clock system can be used in Basic programs by PEEKing

locations 18, 19 and 20 and then performing a little mathematics. Lines 600 and 601 of the listing turn the peeks into elapsed time in whole seconds. It could well have left out the PEEKING terms for use in this program as I would not expect to give anyone more than 21 minutes to answer a single question, but including it gives you a more general case for modification and use in other programs.

### PROGRAM FLOW

The other aspect of timing using Basic that has to be considered carefully is program flow. The main loop of the program must iterate reasonably quickly and continuously, and each iteration must have an element that reduces the clock counter to the nearest setting. If the program iterates steps—for instance to get an input by INPUT or GET—the updating of the clock display will also stop. It causes the timers keep running, but if you cannot see where they have got in they are not much use.

So, if we must not use INPUT or GET for keyboard input, how can we make the program interactive? I made the quiz multiple choice so that a single key press could be used for an answer. Now, the answer lies in the subroutines that starts at line 800. What this does is look in memory location 760 to find the code of the last key pressed. If you key has been pressed the value in 255 will be the other keys, have different values called keycode values. Unfortunately these values are neither the same as the ASCII values (that is what you get from the ASC function), nor the same as the KCODE value (that is the value you have to poke into screen memory to display a character on screen), and your Basic manual will not tell you either. There is a book called Computer's Third Book of Atari which has a whole Appendix devoted to the various keycodes, but I don't know if it is still available. You will just have to find the codes by yourself—the very short program listing will help. For the benefit of this quiz with a choice of three answers we only need to know that pressing 1 results in a value of 31, 2 gives 50 and 3 gives 26. We read the value into variable KEXP in line 600 and then set the variable 18 to 0 for key pressed, 1, 2 or 3 as appropriate. Finally location 764 is reset to a value of 255 before returning from the subroutines.

All this may sound a bit complicated, but it allows the program to keep recycling through lines 100, 110, 120, 130 and the subroutines they call until a key is pressed, and in each cycle the LOGICAL subroutines at line 680 updates the timer. When a key is pressed the timer stops.

```

00 1 000 *****
00 2 000 *          INTERNAL COMMANDS *
00 3 000 * 0000 WITH COUNTDOWN TIMER *
00 4 000 *
00 5 000 *          END *
00 6 000 *          END *
00 7 000 *          END *
-----
00 8 000 * NEW GAME OVER - 000 1000 *
00 9 000 *****
00 10 000
00 11 000 *****
00 12 000 *****
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00 199 000 *****
00 200 000 *****

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## THE QUIZ

I will not go through the whole program line by line as it is only designed as a vehicle for the theory demonstration, but here are a few notes for anyone who would like to take the advice Ed Hall gave in the last issue. Go ahead and change it, polish it or even mistake it to an unrecognizable perfection.

First you will find that there are only three simple questions in this quiz. It is very easy to expand the scope however as the questions and answers are all contained in data statements starting at line 1001. The data format is:

Question, Choice 1, Choice 2, Choice 3, Number of the correct answer, Number of seconds allowed for answering.

The data should be string together separated by commas but no spaces, and you can go on adding as many as you like within the memory of your computer. On my 8080, I estimate there is room for about 400 questions. If you want to set up sets of specialist questions you could type data files and LIST them to disk or LIST "Q" to cassette. These could then be ENTERED and used with the same fundamental quiz program lines 1 to 810. If you do this make certain that all your data lines have the same line numbers, then each set will be loaded will completely accurate any set used earlier. If you have a disk drive it would be quite easy to have several sets of data on one disk and add a couple of lines early in the quiz program to give a choice of quiz subjects before you start. You could have the last line of data (8000) insert as the program recognizes the END data as the end of the game and exits line 800 with a message. Otherwise you will get an error message when the program runs out of data.

Just one caution with the questions and answers. I have allowed 28 characters (including spaces) for each question and 12 for each answer. If you find this too restrictive you can

```

00 1 000 *****
00 2 000 *          INTERNAL COMMANDS *
00 3 000 * 0000 WITH COUNTDOWN TIMER *
00 4 000 *
00 5 000 *          END *
00 6 000 *          END *
00 7 000 *          END *
-----
00 8 000 * NEW GAME OVER - 000 1000 *
00 9 000 *****
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00 99 000 *****
00 100 000 *****

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change the DIM settings in line 21, but remember that the Atari screen is only 40 characters wide (28 if you do not reset the left margin) and if you go beyond this you will have to be careful that the question does not end up with a word broken between two lines.

There are several other enhancements you could make to improve the visual appeal of the game with colour and music using other graphic modes. You could add some sound effects and keep a score table showing how many questions were answered correctly and how long they took. I will leave it to your imagination - get your synthesizer out! If you create a masterpiece I would very much like to see a copy.

You can write to me via Finlayson at  
60 Rosendale Crescent,

East Preston,  
West Sussex  
BN16 1DQ

# XL/XE TYPE-IN

## ADVANCED DARTS CALCULATOR

**H**olds up all you 5-Ball Aardvark owners who think you are a bit of a darts player. Keep your hands up if, like me, the biggest thing in playing the game is actually deducting the score off the total and working out whether 100 is a possible finish or not? Well if that's the case this program could be the solution to your problems. Not only does it keep track of up to a maximum of 10 players' scores, but also displays possible finishes automatically (although actually getting such finishes is a totally different story).

### GET TYPING!

Type in the basic listing and save it in the usual way. When you run the program you are presented with a title screen that vaguely resembles three darts and a prompt to press any key.

You are then required to enter the type of darts game you want. Enter '1' for the standard three legs with a set format, or '2' to select a straight forward number of games over format. After inputting the number of players playing and their names you are then prompted to choose which player will throw first. This is followed by pressing the SELECT key until the appropriate player is highlighted and then pressing START. If the cursor reaches the bottom of the list without a player being chosen it automatically returns to the top of the list and the process is repeated again.

### TO THE OCHE!

Using the program is simply a case of throwing the darts, and entering the scores until someone actually finishes. As a side-line a small table of results is displayed at the bottom of the screen showing each players' current score, their highest score of both the match and the leg, and then either the number of games won by each player or the number of sets and legs won depending upon the match format chosen at the start.

Upon finishing the player is asked to enter the number of darts used to finish. This is not the total number of darts used throughout the leg, just the number used to hit the last turn (i.e. 1, 3 or 5). You are then presented with the main results table showing the winners results as compared with the best results obtained during the match and who achieved these results.

Most of these statistics, like finishing score and number of darts to check out in, are fairly self-explanatory, however the lowest score only registers if you have to get a score greater than 100. This is because of the fact that if someone finishes on two then this would be recorded as the lowest score even though no higher score was possible. Furthermore the "average score" refers to a players average when that person re-

*Richard Welsh presents a simple program that proves to be surprisingly useful for those who like to throw the odd arrow or two*

NAME	SCORE	HIGH MATCH	HIGH LEG	SETS	LEGS
FRED	107	100	100	0	0
SMITH	800				
TOM	7				
PERKINS	1740				
TEE	610				
DICK				0	0

quires a score greater than 100 and is trying to score as highly as possible, whereas the "true average" reflects every score obtained, and how finishing affected this average. In my case due to best scores and frequently having to finish on double my differences are significant between these two statistics.

### HARD COPY

The results table can be printed out by pressing 'P', however as the Atari 1020 cannot print control characters very easily the header to the table is transferred from these control characters to asterisks.

Alternatively pressing 'T' will display each players' individual results for highest and lowest scores, along with the two average score statistics for the last leg, results which can also be printed out by pressing 'P'.

Pressing any other key whilst on the main results table will start the next game, with the computer automatically calculating who is to throw first and prompting them to enter their score.











# THE ACCESSORY SHOP

## ISSUE 61

### NEW and EXCLUSIVE

## ENIGMATIX! HYPNOTIC LAND

### THE TENTH ANNIVERSARY DEMO DISK

Check out inside front cover and page 3 for full details

### KENNEDY APPROACH

One of the most unique simulations ever featuring fully authentic speech synthesis as you try to control the flight of a crowd into your choice of five airports. A real life simulation using 300 graphics that will test your concentration, reaction and common sense to the full as you try to cope with slow planes, fast jets and even a terrorist in a changing weather and with a certain time pressure.



Originally £14.95

OUR PRICE £5.95

DISK ONLY

### PACMAN

What can you say? Surely one of the all time notable classics that should be in every man's collection. A game that can be played by adults and children alike with equal excitement. Very few of these ROMs are left in stock and your collection is not complete without this all time classic. Now it will be gone forever.

ROM CARTRIDGE

Originally £12.95

OUR PRICE £5.95

### ARCHON

A unique battle containing elements of fantasy with the strategy of the simulation. You can improve the force of good and evil and when the war begins the game opens the flood gates to the life with battles, tactics and surprises. They can walk, throw things, run like you can collect weapons and characters. You can play the Light or the Dark either alone or with another player. A really unique game.

ROM CARTRIDGE

Originally £14.95

OUR PRICE £7.95

### PANZER GRENADIERS

In this exciting simulator everyone can make the decision for a captain of the elite armoured units by assigned to the Panzer Division, motor, or others, Panzer IV, Panther and Tiger units. The Russian army is directed by the computer and will throw a challenge you with an area complement of infantry, tanks and anti-tank guns. Three levels of difficulty, joystick control, 3D graphics.

Originally £13.95

OUR PRICE £9.95



DISK ONLY

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Some cables are quite difficult to find but we stock most of those needed for the ZX16 or the ATARI ST. Check to see if the cable you need is here.

#### FOR ZX16

3.18M 1 METRE SERIAL CABLE	0.85	JOYSTICK/ROTOR EXTENSION	0.85
500 INTERFACE TO ST	0.85	3 METRE CONTROL CABLE	1.00
3.18M TO MICRO-CARD	0.45	3 METRE CONTROL CABLE	0.95
3.18M TO SCART	0.50	ST TO 500 INTERFACE	0.85
3.18M TO COMPOSITE VIDEO	1.25	ST FULL ROVER CABLE (2m)	0.85

#### FOR ST

3 METRE PLUMPY CORD (2m)	0.50
CONNECT TO PHILIPS 500 MONITOR	0.25
CONNECT TO SCART	0.25
MONITOR/SCART SWITCH UNIT	0.85
PAIR OF 500 LEADS	0.85
ST TO HITACHI TV	0.25
CONNECT TO PHILIPS 500 M2	0.25

#### GENERAL CABLES

REPLACEMENT JOYSTICK CABLE	NA
3 METRE JOYSTICK EXTENSION	1.00
CONTROL PRINTER (ST 2 m)	0.85
CONTROL PRINTER (ST 2 m)	0.85
CONTROL PRINTER (ST 2 m)	0.85

Our cables are obtained from one of the UK's leading cable manufacturers and use the highest quality components. You can pick up cheaper cables elsewhere but they often use inferior quality components which may cause loss of data and other problems. Attention leads in particular need to be made to the highest specification to ensure integrity of data transfer.

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Don't forget you can also telephone your order and pay by credit card - just pick up that phone and dial 0792 21 9929 and your order will be on its way within 24 hours.

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We still have many dust covers in stock but due to massive price increases in the cost of our preferred material it is doubtful whether we will be able to obtain dust covers of the required quality in future. Buy now while you can.

#### FOR ZX16

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# GAMES

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Take command at the Battle of El Alamein. You can lead either side in this accurate simulation from the creators of P-19 Strike Eagle.

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Has anybody seen a ghost? Whether of fun you may have! All this with unusual backgrounds of ghosts are making their way to the intensive space sector. Well, you can see the world from a ghost of biblical proportions. Go on and show me how you do it!

## BOMB FUSION

A special game has started tonight throughout the International Summer. It's a game that you can see on paper but you can't see the "balls" after you take it on. You can see the game and probably the background/graphics from description.

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Enter the Speedzone in a frantic defense against increasing alien forces. A variety ship and use the alien forces under attack. An all-seeing weapon scans across your "SPEEDZONE" area which will be scanned.

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### ZAXXON

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### US FOOTBALL

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### SUPER BREAKOUT

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### KABOOM

Challenging the master bomber as he tries to bomb you out of sight. Great fun, especially for the kids who will love it.

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### MR ROBOT & HIS ROBOT FACTORY

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# DALEK ATTACK



**A** game for the ST that is being advertised on satellite television, there's a novelty! It is quite possible that some readers may have seen this game in action before their very eyes.

The idea behind the game is for one of three robotlike Doctors and an equally reliable assistant to defend the coordinates of earth. The opening scenes include quite a good rendition of the famous Saturday Afternoon from Friday night electronic music, together with a reasonable rendition of the Doctor's lair.

Unfortunately once the options to choose your player and, if you are involved, assistant, has been taken the action begins with little warning. Graphically reminiscent of Progress with fast, colourful scrolling and bold artwork, the Doctor flies across the screen as a form of jet like blowing

away anything in his path. The real thing here is that like many horizontal scrolling games there is no back-tracking and no stopping. The game also runs so quickly the reaction time needed even at the busy stage is phenomenal.

Should you reach stage one, stage two appears so quickly that the player needs to avoid thinking or he will find himself exterminated.

Possibly this is just acceptable since practice does allow you to be ready in time but I must admit I only managed to see most of these screens by using the reviewer's cheat mode enclosed with the disk. Entry 1 is an aging rapidly or games like this are becoming a rate too fast for the ordinary mortal.

Surprisingly when not cheating I was quite entertained with both the game and my own

incompetence. There was a definite challenge and a genuine desire to have another go throughout the game. I was most impressed by the Play mode like screens and the positive varied reversion. I played this before seeing the television advertisements and thought that the representation quite accurate. There errors like Admiral's lair and although not really the Doctor's personal style - perhaps a graphics adventure would be better over time - this tries to maintain some faith with the original and the action are certainly engaging. This game is a must for all fans of Doctor Who and those who like fast shoot 'em ups.

## FACTS

**Title:** DALEK ATTACK  
**Publisher:** Admiral Software  
**Price:** \$14.99  
**Developer:** Damon Horvath

## SIGHT & SOUND

Surprisingly good both in action and picture

## GAMEPLAY

A bit too fast and hence difficult, Doctor's will keep a great deal.

## VERDICT

Yes, probably the best of the three games I have seen this month - well buying.

## FACTS

**Title:** AROUND THE WORLD  
**Publisher:** Hopperhop & Post  
**Shop:**  
**Price:** \$9.95  
**Developer:** Damon Horvath

## SIGHT & SOUND

Nothing excessive either way, generally quite appropriate.

## GAMEPLAY

Outstanding when some getting involved, it's quite thrilling at times.

## VERDICT

Yes, definitely O.K. but ...



# AROUND THE WORLD

This game is as much as it had a most acceptable soundtrack and a fairly friendly, if

not overdone, sound system. The joystick reveals some sticking to obtain the desired results but the sprites are large enough to make this an entertaining romp.

Owing to the nature of the big friendly looking sprites, even the bad guys look cute and this is helpful because they tend to spoil your day on a regular basis. The game boasts a lot of special features to propel you about the screen which include teleporters and switches to operate various pieces of machinery.

The game played in a friendly but somewhat difficult manner and there were times I wondered why I was quite as fascinated with it as I was.

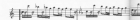
There seemed to be an initial bias towards frustrating the player that could have you on the brink of leaving the whole thing away, but then a slight glossier would appear and the whole thing becomes far more entertaining.

I find it hard to be objective about this game, it looks and feels like a game from the earlier days of the ST. Indeed it almost felt like an Atari game but every so often it delivered a nudge to the mental barrier that made the style seem irrelevant. This is a lovely priced small order game and in many respects the purchaser is not going to be disappointed with it. Sadly you can't try before buying, so balance the pros/cons, have tried hard and returned a marketable game. Maybe it will grow on me after repeated plays though I'm not quite sure.

**T**he independent small programmer is making a comeback to the ST! Whether this is representative of the problems surrounding the ST software market or just demonstration of the pull that the machine has for ordinary programmers I shall leave you to decide.

The game comes in one floppy and is a pleasantly constructed entertainment without the hype. Basically the game is to hunt the key to the secret eye of a star, in many ways reminiscent of the blind and the willows. The plotline consisted in a 3D perspective that feels like the older Ultimate games or even Ultima. I was pleasantly surprised by

# MAKING MUSIC WITH YOUR ATARI



## CD quality sampling with Replay 16

### John S Davison's regular guide to ST music making

**I** just know they'd get there in the end. You folks, Audio Visual Research's (AVR) digital masters of digital sound sampling on the ST have finally produced a full 16-bit version of their famous Replay sampler. It's called Replay 16 and is now available via floppies for just \$129.95. If you read my "Sample This" series for issues 50 to 74) you'll already know about AVR and their sampling products. There have ranged from the simple, inexpensive MasterSound II through various flavors of the basic Replay cartridge. Stereo Replay for stereo sampling, to the excellent Replay Professional. They all suffer from one basic limitation though - they're based on 8-bit sampling resolution which compromises their sonic performance. Despite its name, even Replay Professional can't compete with true professional samplers, which are capable of delivering CD sound quality. That is achieved through 16-bit resolution and a 44.1kHz sampling rate - and Replay 16 can't beat those!

The package includes a large L-shaped cartridge, four double-

sided disks containing the software, and a comprehensive instruction manual, ring bound for convenience. The cartridge has two phono sockets, one each for input and output of stereo audio signals. There's also a small rotary control used for setting input signal sensitivity. The software runs in medium or high resolution on any STE or TT with a double sided disk drive. However, IRE is a practical minimum necessary size, and to fully exploit it you really need more - much more!

Installation is easy - just slide the cartridge into the ST's cartridge port, boot up the sample editing program, and you can start experimenting with the ready-made samples provided. The editor will play samples through the TV monitor speaker, but for better results are obtained by connecting the cartridge's OUT socket to an external amplifier and speakers. To record your own samples you also need to connect a signal source to the cartridge's IN socket, and for both functions you need to supply your own connecting cables. Most people use their hi-fi as a signal source and amplifier, so a couple of ordinary phono-to-phono hi-fi leads will probably suffice.

As with Stereo Replay the software for Replay 16 was developed from that used in AVR's expensive Pro-Series sampler packages. In fact I suspect it's actually recycled Stereo Replay software, as it does include stereo functions even though the hardware is mono only. Perhaps there's a Stereo Replay 16 cartridge to follow?

## REPLAY DESKTOP

The software contains too many features to cover in full here, so I'll describe just the main ones. Despite its complexity AVR have managed to make the programs easy to use, mainly by employing a graphical user interface based on the "Replay Desktop".

The heart of Replay 16 is its sample editor, used for recording new samples, editing and processing them in various ways, and saving them on disk for later use with the MIXEPlay and Deconstruct programs provided. The editor loads up into the Replay Desktop into which you can open windows for various functions. Like the GEM desktop this has a menu bar across the top providing access to virtually all the editor's facilities. For ease of use many of these are also available via mouse-selectable icons on the desktop or directly from the ST's keyboard.

The area below the menu is divided into three areas, these being the "transport" controls, the black control panel, and the main desktop area. The mouse operated transport controls work like a tape recorder's, providing a convenient means of



Replay's main editing screen





# VIDEO MASTER

**A** new craze is sweeping the IBM PC world. This is the "multimedia" phenomenon - advanced sound and graphics integrated into computer applications. So what's new about this? Well, it includes the use of live-motion video clips and high quality sampled stereo sounds in addition to the usual computer-generated varieties. Sound can also be generated from external sound synthesizers via MIDI (one reason why General MIDI came into being), or from specialized add-on sound boards. Multimedia features can be incorporated into many types of applications, but it's particularly attractive for those of an interactive nature, for instance educational programs, games, and simulations, or for producing audio/visual presentations.

You can now buy "multimedia PCs" ready configured for multimedia use, which include a powerful processor, large memory, hard disk, high resolution colour graphics, a good quality sound board, and a CD-ROM drive. The last named is required as true multimedia applications often have enormous disk storage requirements, and the CD-ROM's 600MB capacity is ideal for the job.

Authoring your own multimedia presentations requires even more hardware and software, as you need to add the means of sampling the sound and video material you need, editing them, and building them into finished multimedia products. Generally by the kit to do this is very expensive.

## MULTIMEDIA ON ATARI?

Why am I telling you all this? Well, it's just to put this latest product from MicroVid into context with the mainstream computer world. Video Master is an attempt to put a few cost multimedia playback AND authoring capabilities into the hands of Atari users - it's a video digitiser and sound sampler combined in one unit, complete with software for producing your own multimedia presentations. Like MicroVid's sound sampling products it was developed by Audio Visual Research (AVR).

To run it you'll need a minimum of an STX or Falcon with 1MB memory, a double sided floppy disk drive, and a colour TV/monitor. Larger memory and a hard disk are recommended, but not mandatory. You'll also need a source of video and audio signals - video can be captured from the VIDEO (not EPI) output of a domestic video recorder, camcorder, or video camera, while audio can come from the separate AUDIO output from the same sources or from a hi-fi, Walkman, or similar.

The Video Master package contains a double sided disk holding the software; a tri-colour fibre optic, green, and blue fibres for use with video-camera; a large "L-shaped" cartridge containing the sound and video digitising hardware; and an instruction manual. The program disk includes both ST and Falcon versions of the code, making this one of the first programs released to exploit the Falcon's new graphics capabilities. No connecting leads are included, as these depend on the auxiliary video and audio equipment you intend using. Two



photo-to-photo loads are often all that's required though. After connecting up you may need to adjust two controls on the cartridge - these set contrast and black levels to suit your video equipment. The tiny leads are very fiddly to tuck into your fibres, but the rods are slotted to take a screwdriver blade, which makes the job much easier.

## VIDEO CLIPS

So, what can you do with Video Master? Firstly, it can record video clips at up to 25 frames per second, the standard rate for recording live motion video (or 30fps for overseas use). You can also choose from several slower frame rates, and there's even a time-lapse facility for capturing single frames at any desired interval (hours apart if required). Using this with a video camera you can speed up action that's normally too slow to see, e.g. a flower blooming. There are some restrictions though. Despite colour signal input, Video Master only records in monochrome. Also, the captured clips fill only one quarter of your monitor screen.

Secondly, Video Master can produce 16-level greyscale still pictures from a video source having a good still-frame capability. Or, if you have an electronic colour splitter box (not supplied) you can produce still-frame pictures in colour. Alternatively, camcorder or colour video camera owners can produce colour still-frames by taking three separate "snapshots" of a subject through the tri-colour fibre set provided, and then use the program's "colour merge" facility to produce a colour picture. The ST version of the program handles colour pictures either in 16 colour Digas format or 643 colour Spectrum 643 format. STX format is also handled. On the Falcon this becomes 16-level greyscale in 128x256, 16 colours in normal low-res mode, or up to 4096 colours in TrueColour mode. Unlike motion video clips the still-frame pictures may be full screen size if required.

I used Video Master with a 1MB STX and first tried recording from an old Teletext Beta video recorder. This worked fine for motion video, but wasn't very good as still-frame as the Teletext

he's peace made wasn't really up to it. Both aspects were fine when using a newer Panasonic VHS machine though. I didn't have access to a camcorder or video splitter so couldn't try out the various still-frame facilities.

Video clips can be edited to remove unwanted sections or individual video frames, and you can also insert blank frames or frames "grabbed" from an external video source. A clip can also be reversed, so the action runs backwards! You can even import pictures produced by other means (e.g. a point program from disk) and insert them into an existing clip.

## SOUND SAMPLES

Video Master also records monophonic digitised sound at sampling rates up to 1500Hz. It can do this simultaneously with video clip recording, so you capture the video AND its associated sound in one pass. Or, you can record video and sound separately from completely different sources if required and play them back together. You can even add an audio recorded with a separate sound sampler to your video clips. A looping point may be set both for the video and audio, so the clip and its sound will play back repeatedly until stopped.

The sound software includes facilities found in SPCs (Spoken Sound Sampling Packages). These allow you to set the sampling rate; display the sample waveform; zoom in/out sections from it; mute it in/out; reverse it; and increase or decrease its volume by chosen amounts. You can also load and save samples independently of video clips for greater flexibility.

After editing you can assign a clip for even a still frame and its sound to a key on the ST's keyboard and trigger it by pressing that key. You can load several such clips and frames into memory simultaneously, assign them to different keys, and play them in any order simply by pressing the appropriate keys.

The next stage is to automate the key depressions via Video Master's video sequencer, allowing you to sequentially join a series of different clips to form short "films" complete with audio soundtrack. However, all clips used have to be in memory simultaneously, so to do anything worthwhile you really need large amounts of memory and a hard disk to store everything on.

A completed "film" can be distributed to your friends on floppy disk (assuming it will fit) using VideoPlay, the auto-booting player program provided. This also allows some flexibility in presentation, such as positioning the quarter screen

motion video where you want on the screen, and providing a still-frame background picture to help disguise the fact that the video picture is so small. The demo file supplied with VideoPlay gives a good idea of what's possible.

## EASE OF USE?

Video Master is fairly easy to use once you know what you're doing. Its user interface isn't exactly intuitive, although SPCs have tried hard to make it friendly by representing the program's major functions as four "cards", each accessed by clicking on its "index tab". The hardest bit to assimilate was the video sequencer, and I experienced some trouble with this. It didn't always work as expected, particularly when saving sequences, and I still haven't fathomed out whether those quips are really bugs or something I've misunderstood.

Talking of bugs, Video Master contains a real beauty. If you try to save a still-frame out to disk the program certainly saves an image of the file selector screen instead! SPCs have come clean and warn about this in a README file on disk, and also explain a very messy (re-)installation procedure. They really should have fixed this problem before releasing the program.

One annoying "feature" is that when setting up to record you can only choose incoming video OR sound via the computer's monitor screen - not both together. I found this so irritating I eventually connected a separate TV to the video recorder's RF output just for setup-monitoring purposes.

Another problem I had was missing out of memory, but this wasn't Video Master's fault. Multitasking games memory and IML just isn't adequate for doing anything really serious. OK, it's enough to play around with, and for doing simple video picture grabs for inserting into point and click hyp publishing programs - but not if you want to use live-action video clips. After loading the program there's room for just 96 frames of video - that's under 4 seconds running time at 25 fps. Recording sound as well reduces this even further. There are ways of circumventing an memory, such as using eleven frame rates, looping frame groups so they repeat play, or even using still-frames. With a little ingenuity you can probably make quite substantial multimedia presentations, but IML still cramps your style. IML is the better, with more if possible.

In summary, Video Master delivers a lot for its asking price and generally works surprisingly well. I wouldn't describe it as the "ultimate multimedia system..." as stated on the packaging, as it doesn't begin to compete with what's available in the PC world, but then at this price level you wouldn't expect it. Also, from the number of little quips (bugs?) the software exhibits I get the feeling it's been rushed onto the market and would have benefited from a little more testing and development work. Nevertheless, despite its limitations I'm sure many people will find serious uses for it - even if it's just as a simple video frame grabber and sound sampler rather than as a proper multimedia authoring toolkit.

Product: **VIDEO MASTER**

Producer: **Microware/AVR**

Price: **£89.95**

Reviewer: **John S Davison**



# PD **Paul Rixon's** WORLD

After word processing, the most popular of personal computer applications has to be the database. Computers are, after all, intrinsically designed to store, store, recall and collate large quantities of information. Whether it's customer details, phone numbers or cooking recipes a computer can carry out filing tasks more quickly and accurately than any paper-based system. Moreover, the ST has never been well supported by commercial database publishers - the absence of a common format, such as the dBase standard in the PC world, has not impressed the other two. Microsoft's public domain solutions have helped to fill the gap with some very professional software -

## A COMPETENT START

For relatively small applications, **FIRST BASE** is a competent solution. It's a memory resident system which means that all the data entered is initially held in the memory of your ST. The more memory you have, the more records can be stored. It will work with 512K machines though a upgrade will be needed for anything other than small quantities of data. Because manipulation of the database doesn't require disk access, First Base performs constant tasks very quickly indeed. It's also very easy to use. Most program options can be selected either with the function keys or by clicking on pull-down menu options. You can step through the records in sequence or search for those containing a specified string. You can also sort records into ascending or descending order.

The database is stored on disk as three separate files. One of these contains the data for all records in ASCII format, so you could load it into a word processor. Each database record can contain up to a thousand characters which is fairly easy to compare up to eleven fields. This is another restriction by commercial stan-

dards but possible applications include lists of addresses, video tapes, compact discs or computer game collections. In the latter case you can make use of the 'Caffle' utility supplied which reads disk directories into First Base format. Caffle asks you to specify the required file extensions and then matches your disks for matching files. It creates a database with file names, sizes and sufficient space for you to add a description of the content. There is plenty of documentation on this disk, though it's unlikely you'll need to read it!

## THE ULTIMATE CARD INDEX

When B.Ware's commercial Super Card Index was reviewed in MAJ issue 44 it received some very favourable comments. B.Ware later released an updated version and have now made the original **SUPER CARD 1.0** available on shareware. If you find it useful you are asked to submit the smallest sum of 40p to originally cost five times this amount and to return you'll receive a manual and a diskette on the upgrade.

Super Card is known as one of the easiest to use databases for the ST. It's based on a card index principle and is similar to First Base in that all the data is held and worked in memory, until you

decide to save it onto disk. An unusual feature of Super Card is that it doesn't bother with field lengths, data types and so forth. Each record is 'free format' so you can type in whatever you like, up to 10000 lines of 25500 characters per record. Assuming sufficient memory you could have up to 32767 records - more than enough for most purposes. You can locate individual records manually or by specifying search filters. A filter consists of a character string that can be used with AND or NOT operators to search for records containing, or not containing, particular words or phrases. Once the matches have been displayed you can skip back and forth through the cards and copy, delete, edit, add to or print each one.

The report facilities are limited inasmuch you can't specify field names but you can modify the margins, spacing and the subject of lines to be output. B.Ware claim to have successfully used Super Card for their own customer records, so users should have no problems adopting it for their own applications.

In addition to Super Card 1.0 the disk contains demo versions of several other B.Ware products - Super Card 2, Master Time, B-Spell, School Time Maths and Play Spell. They're supplied in compact form and you are prompted through the process of inserting disks to expand the files for use. This means there is actually several disks worth of software squeezed into the usual space available!



## GETTING MORE SOPHISTICATED

If your database needs require a more sophisticated product, **FASTBASE** may be the answer. Although this is a database version and restricts you to a maximum of ten fields in records of up to ten thousand characters, and five simultaneous databases, these limitations are not significant. For the reasonable price of twenty pounds you can avail for the latest version which is supplied with a professionally typed manual. Fastbase incorporates many features that are normally found only in expensive commercial offerings. These include a relational query system, password protected access and ASCII-compatible output.

The first step to utilizing Fastbase is, of course, to create a database. To do this, you simply choose the type of the fields required and assigns each with a unique name. Four field types are supported: character, numeric, date and calculated. Any of these can be designated as 'required' so that the user will be forced to enter valid data. Calculated fields may contain simple formulas, such as multiplying one field by another, or can be highly complex using functions and nested brackets. There are more than thirty built-in mathematical and financial functions. To view the database records you simply open up a window, which can then be moved and resized freely to the usual manner. The record layout is initially rather unimposing but you can move fields around the window using the mouse to drag them into position. Each field can have its characteristics changed so that dates and numeric values are formatted in a specific way - for example, negative values can have brackets placed around them, a currency prefix can be used, decimal places can be set and zero values can be suppressed. In addition to storing textual data you can attach images to your records. The image may be a file in Degas, DIB, MacDraw or TinyImage and will be automatically stored by the file extension. Only the file name of the image file is loaded when required.

To help you deal easily with subsets of a large database, Fastbase allows you to mark records for future selection in a group. These can then be extracted to disk, printed separately or have other operations performed on them. A facility is provided within the search mechanism for the automatic selection of matching records. You can also 'reverse' the selection, so that non-matching records are flagged. Fastbase offers a powerful method of performing searches: the filter. This allows you to enter a formula, in much the same way as a calculated field, which is then applied to all records to determine those that produce a matching



FASTBASE

result. It will even let you refer to parallel records in another database.

Queries provide the most powerful and flexible method for interrogating the database and customizing the reporting of results. Each query is given a name, a filter (as described above) and a 'report string' that defines exactly what will be reported as records that satisfy the filter. The report items can be field names, quoted strings or formulas. Three buttons - screen, disk and printer - are used to specify where the report should be sent to. You can save query definitions to disk and subsequently reload up to twenty into memory. If you have already entered data into another database application and it can output using comma separated ASCII format, you can easily import this data into a Fastbase. Likewise, you can export data to the same comma delimited format.

Another handy feature of Fastbase is the 'mailslot' option. This lets you create personalized letters to friends or clients using details held in a database, by inserting special commands into your ASCII document file. An example is included to guide you through the method.

You will appreciate that Fastbase has numerous options and only a few can be



FASTBASE for simple applications

described in the space available here. It's probably the most sophisticated tool you can obtain without paying for a commercial package - at least you can afford to give it a try!

## THE WINNER!

I'm pleased to announce that the first educational gift offered in issue 69 has now been claimed! The winner is ... Mr. John Hubbard from Liverpool. Congrats! Letters to him and local reps all round to everyone else who didn't bother to write! Finally, if you're wondering how you can obtain a database of more than eight hundred disks in the Page 6 ST Library, the answer is to get a copy of the Page 6 Catalog Disk. Check the box below for details. See you again soon!

### HOW TO GET THEM

The disks featured in *Page 6 World* can be obtained from the *Page 6 ST Library*. When referring to a specific disk please use the unique reference code for identification. A printed catalogue describing all the library disks is also available from *Page 6* at a cost of £1.99, information regarding the first ten disks ordered. This includes a copy of *Page 6* (24 PAGES) ON PALM OS (2000) which is otherwise priced at £1. The disks featured this issue are:

STREET DIRECTORY V.1  
STREET DIRECTORY V.2  
STREET DIRECTORY V.3  
STREET DIRECTORY V.4

Prices for standard disks are £2.99 each or £2.49 each for those on reserve but prices are lower for members of the *Page 6 ST Library*. Write to: *Page 6*, P.O. Box 64, Stapleford, ST16 2RN. Postphone 0783 21 2222 with credit card orders.

## PAGE 6 TO GAMES MASTER

Being asked to write a feature about your career may sound very flattering, but it's actually quite a difficult thing to do. Describing your triumphs and agonies is very difficult to write) coming across as being a bit pompous and aloof. What follows is a brief description of how working for this 10 year old time has helped my career tremendously. What you're holding in your hand has probably helped me more than anything I have ever done. Although not necessarily the magazine with the largest circulation, *New Atari Line* has acted as a more than ample platform from which to launch a career in writing.

Being a reader of what was then Page 6 magazine at a very young and tender age it was 8-bit computers that were all the rage. Games consoles such as the Atari VCS and the Intellivision were definitely game and hot-pressed by the general public. However everything was turned on its head with the release of the Atari 8080. Super graphics and tons of memory meant that 10 bit games were seen to be well established.

It was at this point that I decided to have a bash at the old writing lark. My dad (yes-John S. Davison and John Davison get me related) had been writing articles about flight simulators for some time and I thought it looked like a pretty good way of bagging free games. After all, when you're only 14 years old, any way of getting some free software has to be a good thing.

After launching out a review of the then "state of the art" sports game - *Winter Games* - I was most surprised to receive a letter which read something along the lines of "... Do you fancy doing this on a regular basis?" Obviously, I didn't have to think too hard as to my reply, and I was soon regularly reviewing 50 games to suit my discerning eye ears.

All this went on for some quite considerable time until I got to that awful distressing part of life - the dreaded A level and the ensuing prospect of job hunting. Well! As my 18 year old self withdrew, the idea of actually going out and finding a job to not the most thrilling prospect. "Hard work" and "earning a living" are two expressions that will strike fear into the heart of any teen and who's just left school.

After bumping around through a couple of exp-out jobs during the summer (Marks and Spencer may be a superb employer but it's hardly eye-opening). I came across a job advert in Database publications (now known as Europress and also the people who published the original Atari User Magazine) for a position on ST Action. After applying and being rejected, I soon received a phone call asking me if I'd like to be a part of their new "exciting and exciting" secret so-called "anyone" project - *Games X*, the UK's first weekly games multi-format magazine. Without the writing experience gained at Page 6 there would have been absolutely no way that I'd have



### John Davison jr. tells how writing for Page 6 led to television stardom

this style computer mag it was finally decided that the mag should be listed. In it's place came the (decidedly dreadful) *CGI Action* - a dedicated Game Boy monthly magazine. At this point a number of things happened which completely changed my career. The job began to spiral downwards in terms of personal satisfaction and the prospect of redundancy seemed to loom ever near. Secondly, the publisher from Europress Interactive, Hugh Collier, left the company and decided to form his own publishing company - *Masterk Magazines*.

Numerous members of the *Europress Interactive* staff were swapped away to the new company where two magazines were to be published - *Central*, a Super Nintendo specific magazine and *Mega Drive Advanced Gaming*, a Mega Drive magazine. By May 1992 the company was up and ready for action.

Beginning my job at the new company I was notified my way up from staff writer to joint Deputy Editor on *Mega Drive Advanced Gaming* (where Hugh, the publisher and MD resided as Editor). With the *Mega Drive* receiving so much attention in both the specialist and general press the job has changed quite considerably from the old days at Page 6. The magazine is currently selling between 40,000 and 50,000 copies a month and has contacts around the world including America and Japan. Being an international machine there are times when it's necessary to pop over to the States to have a prep at the latest gear and the chance to go to something like the Winter CES to see "Tiger" in real the sort of thing you want to miss!

Working with a machine that receives so much exposure also means that from time to time the journalists manage to grab the old live seconds of fame. The now infamous TV programme - *Games Master* has turned to the video games world for it's review section and on a number of occasions I have had the privilege of being looked on a little recording studio with the likes of Donalisk Diamond to record a number of games reviews.

Looking back, it seems hardly feasible that working as a very lowly freelance hasn't led to a (recently) Atari magazine could result in a number of television appearances in front of about 5 million people! Seems a bit wacky when you think about it!

## WHERE CAN I FIND ....

The Atari 540 computers are, without question, the finest home computers ever designed—and can still hold their own against any home computer. More powerful than any 8-bit and much easier to access than any 16-bit, it is a great pity that software and hardware support is dwindling. You can still find support for your machine, though, and this directory should get you on the right track. It is by no means comprehensive and we would be happy to receive details of any other responses, anywhere in the world that still support Atari.

We cannot guarantee what response you might get if you write to any of these companies, but give it a try. If you need your support on earth on you need theirs. Send a couple of international reply coupons in an envelope and, if you don't get a reply, the most you lose is a few bob. But if you do get a response, it could open up a whole new world and add years to the useful life of your Atari. Don't forget to keep an eye on *Atari*, find good support for your Atari Cause.

### Software Infinity

643 East Walling Avenue  
State College, PA 16801  
Good FDI selection. Have just  
begun marketing commercial  
games from overseas.

### Datacube Software

PO Box 104  
Oshawa, ON M1W 2K2  
Turbo-030 16-bit upgrade  
board. Transkey hardware for  
using IBM keyboards on the  
8-bit, and other hardware.

### B&C Computer/Vision

2730 Street (Boulevard)  
Sault Ste. Marie, CA M6G 6G0  
Tel. 416-933-2860  
Major selection of software and  
hardware items. Also some  
rare commercial games, un-  
available elsewhere.

### Sagebrush Software

2304 Appleton Dr.  
Lakeland, FL 33809  
Good FDI/software selection  
with extensive documentation.

### Change In Heat

12 Bella Vista Place  
Iowa City, Iowa 52245  
Independent programmer has  
produced 2 excellent commer-  
cial quality games for the 8-bit.

### Bronck Software

265 River Street  
Barnstable, MA 02540  
Another independent, produc-  
ing good educational software.

### UTSystems

18 East 15th Street  
Bloomberg, PA 17003  
8-bit specialty software.

### NEEDS Software

18 Woods Drive  
Farmingdale, NY 11735  
Primarily related software.

### 88 Computers

8048 N.W. Beaverton Hills  
Way  
Valley View Shopping Center  
Beaverton, Oregon 97005  
(503)677-8425

### Bellcom

PO Box 1843  
Brimleyville, Ontario,  
Canada M0G 2G5  
The largest FDI/software  
selection.

### Compass

PO Box 5183  
San Luis Obispo, CA  
93403 8418  
Classical times gallery.

### No Pella Software

880 East 26th Street  
Fountain, CO 80647  
Classics & Printing  
graphics.

### Miss Delta Software

318/321 Cananda Road,  
Chatham  
Canterbury, Kent/England  
WRL 1 324  
England  
Tandy license in copyright  
and, apparently highly regard-  
ed in the USA.

### Baroness Software

1071 East 18th Street,  
Suite 629  
Brooklyn, NY 11229  
FDI theme disks.

### Alpha Systems

1812 Highland Drive  
Macomb, MI 48056  
Utility software & hardware.

### American Technicians

15300 Inverness Street  
San Leandro, CA 94579  
(510) 952 5630  
Large selection of commercial  
software of almost prices,  
and hardware replacement  
parts.

### Best Electronics

2021 The Alameda, Suite 209  
San Jose, CA 95126  
408 243-8980  
Knows as the Atari hardware  
store, if they don't have the  
part you need, nobody does.

### 88E Software

252 West Portland Ave.  
Suite 104  
Fremont, CA 94701  
FDI/Shareware

### C&T ComputerActive

PO Box 883  
Clinton, ON T2B 0G1

### Phantom Atari 8-bit

806 231 Larkin Road  
Muskogee, OK 41348

### Newell Industries

PO Box 253  
Wylie, TX 75096  
Tel. (214) 442 0812

### Innovative Concepts

31 7th Street Drive  
Warren, MI 48093  
(313) 295-0750

Acoustics, hardware, FDI  
software.

### OS&

PO Box 17980  
Houston, TX 77017  
1700 420 5600  
Specialty hardware items,  
8-bit repair service.

### San Jose Computers

640 Blossom Hill Road  
San Jose, CA 95128  
(408) 285 5888  
New and remanufactured hard-  
ware and software.

### East Hartford Computer

200 Robert Street  
East Hartford, CT 06108  
Discontinued software for all  
computers.

### Aerian Software

PO Box 1222  
Beverly Station, NY, NY  
10017-1222  
Markets a new 8-bit comput-  
er game.

### Total Computers

530 Baltimore Annapolis Road  
Annapolis Park, Maryland  
21144  
C011 544-8943  
Now offers a selection of soft-  
ware and remanufactured  
hardware.

### Grain International

11 Millis Road, Peab.  
Connet, MA 01912 090  
Hardware and software, in-  
cluding ICD products.

### TRACO

P.O. Box 6  
Waltham  
Town & Ship  
MA 021 604  
Regular newsletter with disks  
available to members and  
non-members.

### NO&D

S. J. Murray  
71 Walker Road  
Troy, New York  
NY 12180  
Inclusion  
Producer of the excellent disk  
magazine FUTURE, also avail-  
able on tape.

### More Discount (David Peck)

2835 Frazier Road  
Stanley, West Midlands  
CV11 2GJ 5730  
Large selection of commercial  
software, also hardware and  
replacement parts.

### Tiger Developments

28 Meadows Avenue  
Waltham, Kent  
Kent  
CT14 7JZ  
Commercial 8-bit software.

### Next, is a list of magazi-

nes will supporting  
the 8-bit Atari.

### ATARI CLASSICS

170 Spring Road/9th, 200  
Forest  
Fg 10055-1004  
USA.

A new bi-monthly magazine  
funded by a number of disc-  
count stores to keep the 8-bit  
alive in the States.

### Current Notes

122 North Johnson Road  
Burlington, VT 05475  
A truly excellent Atari-oriented  
magazine, supporting both  
8-bit and 16.

### Atari Database

2497 Blandford Circle  
Ann Arbor, MI 48106  
C013 973 8905  
A magazine supporting both  
8-bit and 16, with input from  
Atari's best brains in the US,  
Canada and the UK. They also  
produce a monthly 8-bit disk.

### New Atari User (PAGE 6)

P.O. Box 14  
Salford, ST16 1JH  
England  
0755 213008

A professionally produced  
magazine supporting both  
8-bit and 16, also large FDI  
library for both machines and  
commercial software.

### ES&E (Robert Stewart)

21 Murray Way  
Broomfield  
Ayr, Strathclyde  
G4 11 2JZ  
Scotland  
Disk based magazine and  
commercial software.

This list was originally pub-  
lished by the disk magazine  
88E in July 1981 and updated  
by Strathclyde Free Group  
where others you will find it  
listed above. Many thanks to  
them and to all who are still  
supporting the disk, long may  
it continue.

Please keep an eye on *Atari* if you  
know of any omissions.



# FREE

with orders over £10

Yes a £9.95 DOS game absolutely **FREE** when you spend over £10 with the Accessory Shop. Check out the offers on this page and on the Accessory Shop pages inside and send or phone your order. If it comes to more than £10 (excluding postage) we'll enclose a copy of this *Fairman* type game absolutely **FREE** if you ask for it.\*

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## ZORK I DISK ONLY

The infusion classic and the adventure game that changed the way all future adventures were written. The Great Underground Kingdom is both as well documented by men and thousands of players have become addicts (relating to Infocom's more difficult adventures). Plus it is the most revolutionary sword adventure for computers to meet with a time experience. If you have never completed underground before now is the time to try. It's never been cheaper to capture your attention! Includes original Infocom packaging with excellent manual and a map.

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## KABOOM!

Challenge the Mad Bomber as he tries to bomb you out of sight. Can you catch his bombs and disarm them in time? Or would you like to be the Mad Bomber and try to flatten one of your friends? Lots of excitement for one or two players in this addictive arcade game that won awards for Best Audio and Visual Effects when it was first released. Simple yet addictive.

ROM CARTRIDGE

**OUR PRICE £2.95**



## RIVER RAID

This fast-selling, all-out battle adventure from Activision will have your games vibrating as you fly up river bombing enemy barges, avoiding lethal choppers and hot air balloons. Can you survive for enough up river to discover the secret? How can. Now this 1 or 2 player game can be yours at the lowest ever price. Bombs away!

ROM CARTRIDGE

**OUR PRICE £3.95**

**CHECK OUT THE ACCESSORY SHOP PAGES FOR MANY MORE BARGAINS!**

## SUPER SPECIALS

### MAXWELLS DEMON

Check out the review in Issue 45. First Blackboard this simple game is so addictive and at this price can you really not be too picky! It's a different type of game, more in the 'table' world than an arcade game. It sure makes you think and the price sure I think you'll love it! Get fully hooked.

DISK ONLY Recommended price £9.95

**SUPER SPECIAL JUST £1.99**

### MR ROBOT & HIS ROBOT FACTORY

One of the most fun of all time games that you can play on the PC, making it an excellent and simple, exciting action, strategy game and more and more great graphics. Includes all CD roms so it can run and will make you smile for hours on end. This is what platform games are all about.

DISK Recommended price

ONLY £9.95 on disk

**SUPER SPECIAL JUST £1.99**

### ZAXXON

One of the all-time classics for the Atari! Zaxxon set new standards when it was first released. It's a strategy game. Play your way across the screen. A different technique involving enemy territories and secret tanks and missiles (including a mining all through space for the ultimate reward with a mining robot. You have got this for Zaxxon, other classics, never before and never in this incredible low price!

DISK Recommended price

ONLY £9.95 on disk

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**ALL ITEMS MAY BE ORDERED WITH THE ORDER FORM ENCLOSED OR BY WRITING TO THE ACCESSORY SHOP, PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR. CREDIT CARD ORDERS MAY BE TELEPHONED TO 0765 213926**